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A QUARTERLY RECORD OF
CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

EDITED BY M. C. COOKE, M.A., A.L.S.,

Author of "Handbook of British Fungi," "Illustrations of British Fungi," "Fungi, their uses," &c., "Rust, Smut, Mildew, and Mould," "British Fresh Water Algæ," "British Desmids," &c., &c.

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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

NEW BRITISH FUNGI.

By M. C. COOKE.

(Continued from Vol. XVI., p. 102.)

Agaricus (Pholiota) molliscorium, Cke. & Mass.

Pileus fleshy, convex, then plane, obtuse, at length depressed, even, smooth, soft like kid leather, tawny yellow; disc darker, dry, shining (2-3 in. broad); margin acute, thin; stem equal, paler, erect, fistulose (3 in. long, $\frac{1}{4}$ - $\frac{1}{3}$ in. thick), silky, punctately squamulose at the apex; ring broad, distant, brownish, deciduous; flesh yellow; gills narrowly adnate, ventricose, crowded, thin, ferruginous; spores elliptical, smooth, ferruginous, $12 \times 5-6 \mu$.

On the ground. Carlisle. (Dr. Carlyle.)

Taste and smell none. Habit that of *A. præcox*, with which it was associated, but differing in the yellow colour and the bright ferruginous gills. Near to *Ag. ombrophilus*, Fr.

Hygrophorus (Hydrocybe) spadiceus, Scop. Carn. 11., 443. Fr. Hym. Eur. 420.

Fragile; pileus thin, conical, acute, repand, fibrillosely virgate, at first covered with an olivaceous bay-brown gluten; stem hollow, equal, dry, becoming dusky and fibrillose; gills rounded behind, free, distant, lemon-yellow.—*Fr. Icon. t. 168, fig. 1.*

On the ground. July. Clun Forest. (W. Phillips.)

Somewhat resembling *H. conicus*, but not turning black.

Lactarius (Piperites) umbrinus, Pers. Syn. 435.

Pileus compact, convex, then plane, umbilicate, dry, floccosely cracking, umber, without zones (3 in. broad); stem solid, very short (about an inch long), white, becoming cinereous; gills crowded, pallid, growing yellowish; milk acrid, white, making greyish spots.—*Fr. Hym. Eur. 429. Cooke Illus. t. 1006.*

In damp places. Epping.

Lactarius (Russularia) tomentosus, Otto, Krombh. t. 40, f. 17, 18.

Pileus at first umbonate, then depressed and infundibuliform; dull flesh colour, becoming rufous and tawny, delicately tomentose (2-3 in. diam.); stem erect, at first stuffed, then somewhat hollow, pallid, naked, smooth; substance compact (2 in. long, $\frac{1}{2}$ in. thick);

gills subdecurrent, yellow flesh colour; milk white (spores 8-9 μ diam.).—*Cooke Illus. t. 1010.*

In swampy ground. Orton Moss, near Carlisle.

Fries quotes Krombholz's figure under *L. helvus* with the note "hand bona." It should doubtless be kept distinct, if only as a sub-species.

Lactarius (Russularia) mammosus, *Fr. Hym. Eur. 434.*

var. **monstrosus**, *Fr. Icon. t. 170, f. 2.*

Pileus fleshy, acutely umbonate, then depressed (2-3 in. diam.), dry, zoneless, lurid, clad with an interwoven grey down; stem stuffed, then hollow, pubescent, pallid (with a lurid purplish tinge, 2-3 in. long, $\frac{1}{2}$ in. thick, or more), gills adnate, crowded, whitish, then pale ferruginous (scarcely other than *whitish* in this variety). Milk white, slowly acrid (spores about 10 μ).—*Cooke Illus. t. 995.*

On the ground. Scarborough. (G. Massee).

Lactarius Terreyi, *B. & Br., Ann. N. Hist. No. 1673*, seems to be the same as *L. cunicularius*, or a variety of *L. camphoratus*, to which the specimens are referred in *Herb. Berkeley.*

Lactarius (Russularia) spinosulus, *Quel. Norm. p. 20, t. 3, f. 10.*

var. **violaceus**, *Cooke Illus. t. 998 B.*

Pileus thin, convex, then depressed (1 in. diam.), dry, tomentose, somewhat aculeate, violet, flesh paler, margin incurved, stem equal, stuffed, granulate, paler, growing pallid (2 in. long, $\frac{1}{4}$ in. thick), gills decurrent, narrow, thin, yellowish. Milk white, soon acrid.

On the ground. Chatsworth, Sept. 1873.

Lactarius (Russularia) cremor, *Fries Hym. Eur. 432.*

var. **pauper**, *Karst. Symb. x p. 58. Icon. f. 26.*

Pileus fleshy, soft, rather plane, smooth, without zones, flesh colour, then yellowish, or gilvous tan colour, rather ochraceous when dry, punctate (3 in. broad or more), margin membranaceous, at length pectinately sulcate; stem hollow, equal, naked, smooth, paler than the pileus (about 2 in. long $\frac{1}{2}$ in. thick), gills adnate, rather distant, thin, soft, colour of the pileus, flesh without juice, slowly acrid, white (spores 8-9 μ).—*Cke. Illus. t. 1008.*

Under fir trees. Carlisle.

Russula (Fragiles) Barlæ, *Quelet. Ass. Fr. 1883, t. vi., f. 12. Sacc. Syll. v., 1860.*

Pileus convex, then flattened and depressed ($2\frac{1}{2}$ - $3\frac{1}{2}$ in.), compact, viscid, then dry, even, peach coloured, yellow, tinged with orange red, sometimes cracking; flesh firm, sweet, white, slightly smelling of melilot, stem fleshy, spongy, firm, silky pruinose, snow white (2 in. long, $\frac{1}{2}$ in. thick), gills white, then becoming pallid ochraceous. Spores sub-globose, granular, 12 \times 10 μ .

Amongst grass, under trees. Kew, Epping Forest.

Our specimens seem to be referable to this species, the pileus has the centre always darker, tinged with a peculiar dull red, the margin bright ochre with a tinge of orange, the whole becoming pale and ochraceous in drying. The flesh of the stem sometimes turns reddish brown when cut, and the odour in age is rather that of crab than of melilot.

Russula (Fragiles) fragilis, *Britz. Hym. Sudb. iv., f. 32.*

Pileus yellow, convex, then plane or depressed, viscid, darker in the centre (about 2 in. diam.), thin towards the margin, but not striate. Stem equal, soft, white, spongy, at length hollow (2 in. long, $\frac{1}{3}$ in. thick), flesh white, mild, inodorous. Gills rather unequal, attenuated behind, somewhat crowded, thin, white. Spores nearly globose, 8-10 μ .

Under trees. Kew, July, 1882.

As far as it is possible to identify any of Britzelmayer's species this seems to accord, taking into account the additions we have made to the diagnosis.

Hypocrea moriformis, *Cke. & Mass.*

Fleshy, hemispherical (1 mm. diam.), scattered, pallid, at length black; perithecia convex, minute, rather prominent, pierced with a pore; asci cylindrical, sporidia uniseptate, then dividing into cubically globose frustules, olive, smooth (5-6 μ).

On rotten wood. Carlisle. (Dr. Carlyle).

Perithecia distinctly indicated, resembling a miniature mulberry.

Nectria pallidula, *Cooke.*

Perithecia caespitose, globose, minute ($\frac{1}{5}$ mm.), smooth, pale ochre, bursting through the cuticle in irregular tufts, sometimes of one or two, sometimes 12 to 20 perithecia, effused when growing on naked wood. Asci clavate-cylindrical, sporidia for the most part uniseriate, subfusiform, uniseptate, hyaline ($12 \times 3 \mu$).

On beech bark and wood. Carlisle. (Dr. Carlyle).

Mucor lateritius, *Cke. & Mass.*

Mycelium forming a continuous dense, dry, bright-brown felt, spreading over the tuber. Fertile hyphae erect, simple or furcate; capitulum globose, sporidia subglobose ($12 \times 9-10 \mu$), pale brick-red, smooth.

On putrid potatoes. Kew.

Trichosporium umbrinum, *Link.*

Threads branched, bay-brown, forming a dense, long, and broadly effused interwoven stratum; conidia globose, smooth, brown ($12-14 \mu$ diam.).

Running over plant pots, &c. ("Gardeners' Chronicle.")

Oedocephalum sulfureum, *Cke. & Mass.*

Tufts hemispherical or confluent, sulphur-coloured. Threads septate, dichotomous, globosely capitate at the apex, papillate, conidia globose, hyaline ($3-5 \mu$ diam.). Epispore smooth.

On rope. Herbarium grounds, Kew.

Melanconium rusci, *Cke. & Mass.*

Pustules scattered, orbicular, erumpent, covered by the lacerated brown cuticle. Conidia elliptical, continuous, sooty-olive ($12 \times 7-8 \mu$).

On phyllodes of *Ruscus aculeatus*. Kew.

This cannot be a form of *Sphaeropsis rusci*, for there is no perithecium, and the pustules are scattered and solitary.

BRITISH PYRENOMYCETES.

By G. MASSEE.

(Continued from Vol. xvi., p. 120.)

Fam. 10. **PERTUSÆ.** Perithecia emergent, smooth, flattened at the base, adnate or subimmersed. Ostiolum papillate, or pierced.

GEN 1. **CONISPHERIA.** Sporidia hyaline.

* **ZIGNOINA.** *Sporidia continuus.*

C. rhodobapha, *B. & Br., Sacc. Syll.* 3659.

On old wood. South Kensington, Bristol.

** **MELANOPSAMMA.** *Sporidia uniseptate.*

C. pæcilostoma, *B. & Br., Sacc. Syll.* 3652.

On furze. Lynn.

* * **MELOMASTIA.** *Sporidia biseptate.*

C. Friesii, *Nke., Sacc. Syll.* 3625 ; *Hdbk.* 2620 (= *S. Lonicæræ*, Sow.).

On honeysuckle. Highgate, Shere, Lynn.

** **ZIGNOELLA.** *Sporidia multiseptate.*

C. hysterioides, *Curr., Grer. xvi.,* 92.

On rotten wood. Chislehurst.

C. macrasca, *Sacc. Syll.* 3668.

On bleached elm wood. Bulwer, Yorks, Scarboro'.

GEN. 2. **TICOTHECIUM.** *Flot.* Perithecia minute, growing on Lichens. Sporidia septate.

* **PHARCIDIA.** *Sporidia hyaline.*

** **GENUINA.** *Sporidia coloured.*

† *Sporidia uniseptate.*

T. gelidarium, *Mudd., p.* 130 ; *Sacc. Syll.* 2232.

On *Squamaria gelida*. Teesdale.

T. perpusillum, *Nyl., Sacc. Syll.* 6593.

On *Aspicilia*. Gloucestershire, Ben Cranchan, Kylemore (I.).

T. calcaricolum, *Mudd., p.* 306 ; *Sacc. Syll.* 6597.

On *Aspicilia*. Lewes, Sussex, Longmynd, Ben Lawers, Ireland.

T. gemmiferum, *Tayl., Sacc. Syll.* 6598.

On lichens. Shrewsbury, Penzance, Cleveland, Grampians, Wales, Ireland.

T. squamarioides, *Mudd.*, p. 130 ; *Sacc. Syll.* 6600.

On *Squamaria gelida*. Teesdale.

T. cerinarium, *Mudd.*, p. 136 ; *Sacc. Syll.* 6602.

On *Callopisma*. Near Ayton, Cleveland.

†† *Sporidia triseptate*.

T. pygmæum, *Korb.*, *Sacc. Syll.* 6604.

On *Aspicilia*. Bræmar and Lough na-cat, Scotland ; Armagh, Cleveland. (v. *Ventosicola*, *Mudd.*)

On *Hæmatococca*. Kildale Moor.

T. leucomelarium, *Mudd. Man.* p. 105 ; *Sacc. Syll.* 6605.

On *Borrera*. Cork.

T. rimosicolum, *Leight.*, *Sacc. Syll.* 6606.

On *Diplotomma calcareum*. Wrekin, Penhill, Yorks, Carlton Bank, Cleveland, Ben Lawers, Appin, Killarney, Galway.

GEN. 3. **AMPHISPHERIA**. *Sporidia* coloured.

* **AMPHISPHERELLA**. *Sporidia* continuous.

** **GENUINA**. *Sporidia uniseptate*.

A. ventosaria, *Linds. Sacc. Syll.* 2761.

On *Lecanora ventosa*. Lochnagar.

* * **MELANOMMA**. *Sporidia 2-3 septate*.

A. Jenynsii, *B. & Br.*, *Sacc. Syll.* 3232. .

On wood. Bottisham, King's Cliffe, Batheaston.

A. obliterans, *B. & Br.*, *Sacc. Syll.* 3233 ; *Hdbk.* 2621.

On fir. Forres, N.B.

** *Sporidia 4 or many septate*.

A. brachythele, *B. & Br.*, *Sacc. Syll.* 3269 ; *Hdbk.* 2609.

On elder. Batheaston, Gopsall, Chislehurst.

*** **TREMATOSPHERIA**. *Perithecia large, sporidia 3 or multiseptate*.

A. pertusa, *Pers.*, *Sacc. Syll.* 3285 ; *Hdbk.* 2604.

On wood. Bishop's Wood, Epping.

A. anglica, *Sacc. Syll.* 3286.

On ash. King's Lynn.

A. melina, *B. & Br.*, *Sacc. Syll.* 3294.

On ash. Batheaston.

A. lunariæ, *Curr.*, *Grev.* xvi., 92.

On decorticated branches of ash.

*** **CARYOSPORA**. *Sporidia very large, apiculate*.

A. callicarpa, *Curr.*, *Sacc. Syll.* 3313 ; *Hdbk.* 2605.

On wood. Kidbrooke.

GEN. 4. **WINTERIA**, *Rehm*. Perithecia rather soft, green or rufous.

* *Sporidia septate, pale.*

W. ordinata, *Fr., Sacc. Syll.* 3680 ; *Hdbk.* 2583.

On naked oak wood. Little Heath, Essex.

BERKELEY AND CURTIS TYPES.

By M. C. COOKE.

Some of the junior mycologists of the United States are committing a dangerous mistake in their estimate of the Curtis herbarium, and the relation of the late Dr. Curtis to the species published under the joint names of Berkeley and Curtis. The cardinal error consists in regarding the Curtisian specimens as the *types*, which some are now insisting upon, but which they are *not*, and only a misapprehension of the signification of a "type" can have led to this assumption. Dr. Curtis collected the specimens it is true, but he did not describe them; all the diagnoses were drawn up and published by the Rev. M. J. Berkeley, in their joint names, from specimens communicated by Dr. Curtis. Hence the only legitimate type specimens are those upon which the diagnoses were constructed, and which are preserved in the Berkeley Herbarium. Wherever it may occur that specimens in the Curtis Herbarium do *not* accord with those in the Berkeley Herbarium no one can attempt to deny that the specimens in the Berkeley Herbarium *must* be regarded as the type, and no other. There cannot possibly be two types, and the genuine type must essentially be that upon which the diagnosis is founded. It is folly to introduce anything like "spread-eagleism" into a question of this kind, but far wiser to accept facts as they stand, and recognize the Curtisian Herbarium as containing presumed duplicates of specimens sent to Berkeley and constituted by him the types of certain species, at the same time admitting that when they differ this is not to be attributed to error in the diagnosis, but to an error on the part of Dr. Curtis, whom we know, from experience of specimens communicated to ourselves, did not pay sufficient regard to microscopical characters to be absolutely trustworthy. No one who knows anything of the history of the Berkeley and Curtis connection can dispute this statement of the *facts*, and we contend that consequently no fictitious value should be given to the Curtisian specimens, nor any preference accorded to them when they happen to differ from the only true and veritable *type*-specimens, upon which the diagnoses were based. Nothing could have originated such an error as we have intimated above, save an ignorance of the initial facts, which we have now endeavoured to set forth in a clear and impartial manner, in the hope that all misapprehension may thereby be removed.

AUSTRALASIAN FUNGI.

BY M. C. COOKE.

(Continued from Vol. XVI., p. 114.)

Those indicated by an asterisk (*) communicated by Baron F. Von. Mueller.

* **Agaricus (Entoloma) galbineus**, *Cke. & Mass.*

Sulphur colour. Pileus rather fleshy, convex then expanded, obtusely umbonate (1-2 in. broad), umbo darker, almost saffron-colour, smooth, moist; stem equal, fibrillose, fistulose (2 in. long, 2-3 lines thick). Gills slightly adnexed, ventricose, pallid. Spores rosy, globose, angular, $10\ \mu$ diam.

On the ground. Walhalla (*Tisdall* 48).

* **Agaricus (Leptonia) quinquecolor**, *Cke. & Mass.*

Pileus membranaceous, convex, smooth, slightly virgate with radiating pink fibrils; margin yellowish, disc brownish brick-red (about 1 in. diam.), stem cylindrical, equal, or slightly attenuated upwards, fistulose, bay brown, whitish flocculose at the base (2 in. long, 1 line thick), usually caespitose; gills sinuately adnate, rosy. Spores globose, rough, $8-10\ \mu$.

On black loam. Walhalla (*Tisdall* 54).

* **Agaricus (Hebeloma) arenicolor**, *Cke. & Mass.*

Pileus fleshy, convex then plane, smooth, rather viscid, dingy ochre or sand colour ($1\frac{1}{2}$ -2 in. broad). Stem cylindrical, subfibrillose, smooth, same colour as the pileus, fistulose, terminating at the base in a conical root (3 in. long, $\frac{1}{4}$ in. thick), gills adnate, rounded behind, scarcely crowded, ventricose, pallid, then ochraceous. Spores ellipsoid, dingy umber, $20 \times 10-12\ \mu$.

On the ground. Near Melbourne (*Tisdall* 44, 49).

* **Calocera (Ramosæ) digitata**, *Cke. & Mass.*

Branched ($1-1\frac{1}{2}$ in. high), tough, even, pallid; trunk thin, smooth, twice or three times furcate, branches expanded at the apex in a spatulate manner, each bearing from 3 to 5 delicate scyphoid processes arranged like fingers on the open hand. Spores white, elliptical, $5-6 \times 3\ \mu$.

On damp logs. Fern gully, Dandenong (*French*, No. 2).

Didymium australis, *Massee*.

Sporangium globose or slightly compressed, indistinctly umbilicate, covered with a dense white layer of crystals of lime which breaks away in patches; stem elongated, erect, filiform, slightly thickened downwards, bright brown; threads of capillitium colourless, slender, variously branched; spores globose, smooth, dingy, purple-brown, $10-11\ \mu$ diam.

Gregarious. Stem 3-4 mm. long; sporangium about 2 mm. broad \times 1-5 mm. high.

On old *Auricularia*. Brisbane (*Bailey* 596).

Ustilago sclerotiformis, Cke. & Mass.

Black, compact, obovate, large (2 mm. diam), never becoming powdery, spores subglobose, dark umber (16-18 μ diam.). Epispore granulose.

Absorbing the ovaries of *Uncinia caespitosa*. Taheraite, New Zealand (Kirk. 321).

Somewhat resembling *U. marmorata*, B., but that species has spores distinctly verrucose, in the type specimens, although included by F. de Waldheim with the smooth-spored species.

*** Cucurbitaria (Melanomma) plagia**, Cke. & Mass.

Perithecia densely crowded, forming oblong erumpent clusters, which are at length almost superficial, and confluent in large patches, 2-3 in. long; the individual perithecia are globose, but compressed and deformed by crowding, black, shining, smooth. Ostiolum minute. Asci cylindrical; sporidia in one or two series, lanceolate, triseptate, pale-brown (40-45 \times 10-12 μ).

On living twigs of *Cassinia aculeata*. Port Phillip (French).

Resembling *Othiella morbosa* in habit.

Fusicolla incarnata, Cke. & Mass.

Epiphyllous. Pustules small, gregarious, seated on paler spots, convex, rosy flesh colour, here and there confluent (scarcely $\frac{1}{4}$ mm. diam.), somewhat gelatinous, or scattered over the petioles, and midribs. Conidia cylindrical, rounded at the ends, nucleate or granular, hyaline, straight, simple, 16-20 \times 4-5 μ . Sporophores very short and deciduous.

On dead coriaceous leaves. Brisbane (Bailey 597).

BRITISH HYPHOMYCETES.

(Concluded from Vol. XVI., p. 113.)

ORD. 3. *STILBEÆ*.Ser.* *HYALOSTILBEÆ*.

Stilbum melleum, B. & Br. Sacc. Syll. iv., 2667.

On bark. Congresbury.

Stilbum orbiculare, B. & Br. Sacc. Syll. 2676.

On *Lindbladia effusa*. Aviemore, Rothiemurchas, N.B.

Stilbum tomentosum, Schr. Sacc. Syll. 2677.

On *Trichia*. Scotland, Scarboro', Forden, Shere, Hitchen, Twycross, Carlisle, Apethorpe, Haywood Forest.

Stilbum erythrocephalum, Ditm. Sacc. Syll. 2680.

On dung. Scarboro', Orton Wood.

Stilbum vulgare, Tode. Sacc. Syll. 2682.

On rotten wood. Scotland, Scarboro', Berwick.

Stilbum pellucidum, Schrad. Sacc. Syll. 2685.

On wood and rotten fungi. Appin.

- Stilbum acicula**, *Sacc. Syll.* 2691.
On herb stems. Apethorpe.
- Stilbum vaporarium**, *B. & Br. Sacc. Syll.* 2698.
On wood in stoves. Kew Gardens.
- Stilbum fasciculatum**, *B. & Br. Sacc. Syll.* 2699.
On wood. Swansea, Wrekin, Kew.
- Stilbum fimetarium**, *Pers. Sacc. Syll.* 2710.
On dung. Scarboro', Shrewsbury, Downton, near Ludlow,
Cowan Court, Elmstead, Ringmer, Epping, King's Lynn.
- Stilbum aurantiacum**, *Bab. Sacc. Syll.* 2714.
On branches. Leicestershire, Salisbury, Shrewsbury.
- Stilbum turbinatum**, *Tode. Sacc. Syll.* 2718.
On trunks. Twycross.
- Stilbum ranigenum** (*B. & Br. = Acremonium*). *Sacc. Syll.* 2719.
On rotten branches. Monkton Farleigh.
- Stilbum tetraonum**, *Cke.*
On grouse dung. Rannoch.
- Stilbum citrinellum**, *Cke. & Mass. Grev. XVI., 81.*
On leaves of *Lycopodium*. Kew.
- Stilbum nigripes** (*Carm.*), *Cke. Grev. XVI., 81.*
On oak leaves. Appin.
- Pilacre faginea**, *Fr. Sacc. Syll.* 2748.
On rotten beech. Wiltshire.
- Pilacre Petersii**, *B. & C. Sacc. Syll.* 2752.
On rotten hornbeam. Epping Forest, Hainault Forest, Lyndhurst.
- Coremium glaucum**, *Fr. Sacc. Syll.* 2758.
On rotting fruit. Edinburgh.
- Coremium coprophilum**, *B. Sacc. Syll.* 2753.
On rabbit's dung. Kew.
- Isaria farinosa**, *Dicks. Sacc. Syll.* 2772.
On chrysalids. Hampstead, Darent, Dinmore, Weybridge,
Blackheath, Shere, Carlisle, Bristol.
- Isaria crassa**, *Link. Sacc. Syll.* 2774.
On chrysalids. Kent.
- Isaria floccosa**, *Fr. Sacc. Syll.* 2778.
On pupæ of *Bombyx Jacobæa*.
- Isaria sphingum**, *Schw. Sacc. Syll.* 2781.
On dead Lepidoptera.
On pupæ of Diptera. Kincardineshire.
- Isaria arachnophila**, *Ditm. Sacc. Syll.* 2791.
On spiders. Scotland.
- Isaria felina**, *D.C. Sacc. Syll.* 2793.
On cat's dung. London.
- Isaria brachiata**, *Batsch. Sacc. Syll.* 2800.
On fungi. Apethorpe.
- Isaria citrina**, *Pers. Sacc. Syll.* 2801.
On trunks and decaying fungi. Jedburgh.

Isaria intricata, Fr. Sacc. Syll. 2802.

On dead *Strenum*. Glamis, N.B., Scarboro', King's Cliffe, Lucknam, Exeter.

Isaria umbrina, Pers. Sacc. Syll. 2807.

On *Hypoxylon coccineum*. Batheaston, Sydenham, Dinmore.

Isaria microscopica, Grev. Sacc. Syll. 2808.

On *Trichia clarata*. Auchindenny, N.B.

Isaria Friesii, Mont. Sacc. Syll. 2809.

On bark. Milton, Apethorpe, Spye Park.

Isaria albida (Fr.). Sacc. Syll. 2814.

On rotten wood. King's Cliffe.

Isaria spumarioides, Cooke. Sacc. Syll. 2816.

On bark. Knowsley.

Isaria tomentella, Fr. Sacc. Syll. 2832.

On leaves. Ann. Nat. Hist. No. 1711.

Isaria fuciformis, Berk. Sacc. Syll. 2839.

On grasses. Ashford, Kent.

Isaria puberula, Berk. Sacc. Syll. 2840.

On dahlia flowers. Apethorpe.

Isaria muscigena, Cooke & Mull. Grev. XVI., 81.

On moss. Eastbourne.

Ceratium hydroides, A. & S. Sacc. Syll. 2845.

On rotten wood. Scotland, Scarboro', Dinmore, Carlisle, Oldham, Appin, Tansor (Notts.), Holm Lacey.

Atractium flammeum, B. & R. Sacc. Syll. 2860.

On bark. Penzance.

Ser.** PHÆOSTILBEE.

Sporocybe byssoides, Pers. Sacc. Syll. 2877.

On herb stems. Darent, Shere, Forden, Batheaston, Apethorpe, Charny Down, Shrewsbury.

Sporocybe brassicæcola, B. & Br. Sacc. Syll. 2878.

On cabbage stalks. Batheaston.

Sporocybe cuneifera, B. & Br. Sacc. Syll. 2879.

On cabbage stalks. Batheaston.

Sporocybe calicioides, Fr. Sacc. Syll. 2885.

On beech trunks. (Scotland?).

Sporocybe atra (Desm.). Sacc. Syll. 2891.

On grass. Isle of Wight.

Sporocybe Phillipsii, B. & L. Sacc. Syll. 2894.

On naked soil. Trefriew, N.W.

Graphium stilboideum, Corda. Sacc. Syll. 2896.

On cabbage stems. Batheaston.

Graphium rigidum, Pers. Sacc. Syll. 2897.

On rotten trunks. Glamis, N.B., Carlisle.

Graphium calicioides (B.). C. & Mass. Grev. XVI., 11.

On wood. Kew, Glamis.

- Graphium Desmazierii**, Sacc. Syll. 2898.
On rotten trunks.
- Graphium flexuosum**, Mass. Sacc. Syll. 2902.
On rotten wood. Scarboro'.
- Graphium subulatum**, Nees. Sacc. Syll. 2910.
On acorns and fir cones. Scotland, Scarboro', King's Cliffe.
- Graphium Grovei**, Sacc. Syll. 2911.
On wood. Hampton in Arden.
- Graphium Passerinii**, Sacc. Syll. 2912.
On *Gynerium argenteum*. Kew.
- Graphium Stevensonii**, B. & Br. Sacc. Syll. 2915.
On rotten wood. Glamis, N.B.
- Graphium griseum**, Berk. Sacc. Syll. 2926.
On herb stems. Kinrara, N.B.
- Graphium glaucocephalum**, Corda. Sacc. Syll. 2927.
On nettle stems. Burnt Ash Lane (F. Currey).
- Graphium piliforme**, Pers. Sacc. Syll. 2928.
On herbs. Appin.
- Graphium nigrum**, Berk. Sacc. Syll. 2931.
On culms of *Eriophorum*. Stibbington.
- Graphium anomalum**, Berk. Sacc. Syll. 2937.
On dead branches. King's Cliffe.
- Graphium bicolor**, Pers. Sacc. Syll. 2943.
On trunks. Appin.
- Graphium graminum**, Cke. & Mass. Grev. XVI., 11.
On *Gynerium*. Kew.
- Harpographium graminum**, Cke. & Mass. Grev. XVI., 81.
On straw. Hampstead.
- Stysanus stemonitis**, Pers. Sacc. Syll. 2951.
On trunks, herbs, &c. Greeshop, N.B., Chislehurst, Kew, Holloway.
- Stysanus putredinis**, Corda. Sacc. Syll. 2965.
On rotten leaves. Glamis, N.B.
- Stysanus clematidis**, Eckl. Sacc. Syll. 2960.
On clematis. Batheaston.
- Graphiothecium parasiticum** (Desm.). Sacc. Syll. 2971.
On dead leaves. Dartford.
- Arthrobotryum stilboideum**, Ces. Sacc. Syll. 3986.
On wood. St. Catharines.
- Arthrobotryum atrum**, B. & Br. Sacc. Syll. 2987.
On herb stems. Charny Down, Batheaston.

ORD. 4. TUBERCULARIÆ.

- Tubercularia vulgaris**, Tode. Sacc. Syll. 3002.
On branches. Very common.
- Tubercularia granulata**, Pers. Sacc. Syll. 3006.
On *Robinia*, &c. Scotland.

- Tubercularia ligustri**, *Cke.* *Grev.* XVI., 49.
On *Ligustrum*. Kew.
- Tubercularia nigricans**, *Bull.* *Sacc. Syll.* 3009.
On *Ulmus*, &c. Jedburgh.
- Tubercularia euonymi**, *Roum.* *Sacc. Syll.* 3013.
On *Euonymus*. Kew.
- Tubercularia conorum**, *C. & M.* *Grev.* XVI., 49.
On fir cones. Carlisle.
- Tubercularia aquifolia**, *C. & M.* *Grev.* XVI., 49.
On holly leaves. Highgate.
- Tubercularia æsculi**, *Opiz.* *Sacc. Syll.* 3014.
On *æsculus*. Kew Gardens.
- Tubercularia expallens**, *Fr.* *Sacc. Syll.* 3015.
On *æsculus*. Kew Gardens.
- Tubercularia confluens**, *Pers.* *Sacc. Syll.* 3017.
On *salix* and *acer*. Common.
- Tubercularia sambuci**, *Corda.* *Sacc. Syll.* 3020.
On *Sambucus*. Kew.
- Tubercularia versicolor**, *Sacc. Syll.* 3036.
On box twigs. King's Cliffe.
- Tubercularia sarmentorum**, *Fr.* *Sacc. Syll.* 3042.
On ivy. Neatishead, Batheaston.
- Tubercularia herbarum**, *Fr.* *Sacc. Syll.* 3056.
On herb stems.
- Tubercularia brassicæ**, *Lib.* *Sacc. Syll.* 3057.
On cabbage stalks. Isleworth.
- Dendrodochium citrinum**, *Grove.* *Sacc. Syll.* 3083.
On rotten pine wood. Burntgreen (Warw.).
- Tuberculina persicina**, *Ditm.* *Sacc. Syll.* 3088.
Parasitic on uredines. Dinmore.
- Illosporium roseum**, *Schreb.* *Sacc. Syll.* 3100.
On lichens. Scotland, Bungay, Hampstead, Wellington (Salop),
Whitwick, Batheaston.
- Illosporium coccineum**, *Fr.* *Sacc. Syll.* 3101.
On lichens. Twycross.
- Illosporium corallinum**, *Rob.* *Sacc. Syll.* 3102.
On *Parmelia parietina*, &c. Shrewsbury.
- Illosporium carneum**, *Fr.* *Sacc. Syll.* 3103.
On *Peltigera*, &c. Moncrieffe, N.B., N. Wootton, Plymouth,
Apethorpe.
- Illosporium Curreyi**, *Sacc. Syll.* 3116 (*Arthroderma, Berk.*).
On branches and leaves. Hereford.
- Ægerita candida**, *Pers.* *Sacc. Syll.* 3124.
On wood. Scotland, Scarboro', Coed Coch, near Manchester,
Spye Park, Twycross, Appin, Downton.
- Ægerita virens**, *Carm.* *Grev.* XVI., 81.
On (birch?) bark. Appin.

- Fusicolla Betæ**, *Bon. Sacc. Syll.* 3142.
On beetroot.
- Sphacelia segetum**, *Lev. Sacc. Syll.* 3147.
On *Sclerotium clavum*.
- Sphacelia typhina**, *Pers. Sacc. Syll.* 3150.
On *Dactylis*. Common form of *Epichlœe*.
- Hymenula constellata**, *B. & Br. Sacc. Syll.* 3170.
On chips. Batheaston.
- Hymenula rubella**, *Fr. Sacc. Syll.* 3171.
On *Typha*. Lincolnshire.
- Hymenula Berkeleyi**, *Sacc. Syll.* 3174 (punctiformis, *B.*).
On larch. Batheaston.
- Hymenula vulgaris**, *Fr. Sacc. Syll.* 3157.
On nettle stems. Twycross.
- Hymenula pezizoides**, *Phil.*
On pine leaves. Forres, N.B.
- Cylindrocolla Urticæ**, *Pers. Sacc. Syll.* 3190.
On nettle stems. Very common. Highgate, Eltham, Forden, Shere, Epping, Twycross, Shrewsbury, Thirsk, King's Cliffe, Audley End, Darenth, Tunbridge, Downton, Breenton.
- Periola tomentosa**, *Fr. Sacc. Syll.* 3219.
On potatoes. King's Cliffe.
- Volutella ciliata**, *A. & S. Sacc. Syll.* 3223.
On potato. Sanquhar, N.B., King's Cliffe.
- Volutella roseola**, *Cooke. Sacc. Syll.* 3230.
On *Billbergia*. Glasnevin (L.).
- Volutella hyacinthorum**, *Berk. Sacc. Syll.* 3231.
On bulbs. King's Cliffe, Dublin.
- Volutella setosa**, *Grev. Sacc. Syll.* 3235.
On herb stems. Scotland, Appin, Dartford, Dupplin, N.B., Rotherwas, Credinhill.
- [**Volutella nivea**, *Sacc. Syll.* 3236 (= *Psilonia*, *Fries*).
On bark of *Fagus*. Is *Adelges Fagi*, according to authentic specimens.]
- Volutella buxi**, *Corda. Sacc. Syll.* 3237.
On box leaves. King's Cliffe, Dorking, Whitehall.
- Volutella gilva**, *Pers. Sacc. Syll.* 3240.
On putrid leaves. Southwick, Notts.
- Volutella discoidea** (*B. & Br.*, sub. *Psilonia*), *Sacc. Syll.* 3246.
On chips. Wilts, Chippenham.
- Volutella melaloma**, *B. & Br. Sacc. Syll.* 3252.
On leaves of *Carex*. Spye Park.
- Volutella arundinis**, *Desm. Sacc. Syll.* 3261.
On sheaths of reed. Spye Park.
- Endodesmia glauca**, *B. & Br. Sacc. Syll.* 3267.
On cabbage stalks. Batheaston.

- Bactridium flavum**, *Kunze.* *Sacc. Syll.* 3268.
On rotten wood. Audley End, King's Lynn, Bristol, Ascot,
Batheaston, King's Cliffe.
- Bactridium acutum**, *B. & W.* *Sacc. Syll.* 3275.
On hymenium of *Peziza*. Glen Tilt, N.B.
- Bactridium helvellæ**, *B. & Br.* *Sacc. Syll.* 3276.
On hymenium of *Peziza*. Batheaston.
- Bactridium atrovirens**, *Berk.* *Sacc. Syll.* 3278.
On trunks. Apethorpe.
- Fusarium sarcochroum**, *Desm.* *Sacc. Syll.* 3281.
On branches. Sydenham.
- Fusarium pyrochroum**, *Desm.* *Sacc. Syll.* 3282.
On acorns. Kew.
- Fusarium lateritium**, *Nees.* *Sacc. Syll.* 3283.
On branches. Scotland, Milton, King's Cliffe, Dinmore.
- Fusarium viticola**, *Thum.* *Sacc. Syll.* 3288.
On *Ampelopsis*. Kew.
- Fusarium tubercularioides**, *Corda.* *Sacc. Syll.* 3299.
On branches of raspberry.
- Fusarium fœni**, *B. & Br.* *Sacc. Syll.* 3306.
On damp hay. Apethorpe.
- Fusarium myosotidis**, *Cke.* *Grev.* XVI., 49.
On leaves of *Myosotis*. Forden.
- Fusarium inæquale**, *Awd.* *Sacc. Syll.* 3310.
On herbs.
- Fusarium diffusum**, *Carm.* *Grev.* XVI., 81.
On stems of thistles. Appin (Carmichael).
- Fusarium roseum**, *Link.* *Sacc. Syll.* 3311.
On stems and leaves. Downton, Highgate, Neatishead, King's
Cliffe, Apethorpe.
- Fusarium brassicæ**, *Thum.* *Sacc. Syll.* 3314.
On cabbage stalks. Isleworth, Twyross.
- Fusarium aurantiacum**, *Corda.* *Sacc. Syll.* 3334*.
On gourds. Apethorpe.
- Fusarium cœruleum**, *Lib.* *Sacc. Syll.* 3335.
On potatoes.
- Fusarium solani**, *Mart.* *Sacc. Syll.* 3336.
On potatoes. Common.
- Fusarium heterosporum**, *Nees.* *Sacc. Syll.* 3343.
On grasses. Goole, Hereford, Batheaston.
- Fusarium mininum**, *Fuekel.* *Sacc. Syll.* 3345.
On *Poa pratensis*. Isleworth.
- Fusarium insidiosum**, *Berk.* *Sacc. Syll.* 3346.
On *Agrostis*. Gard. Chron. 1860, p. 480.
- Fusarium bulbigenum**, *C. & M.* *Grev.* XVI., 49.
On Narcissus bulbs. London.
- Fusarium filisporum**, *Cooke.* *Sacc. Syll.* 3348.
On *Orthotrichum*. Eastbourne.

- Fusarium obtusum**, Cooke. *Sacc. Syll.* 3353.
On *Diatrype*. Forres, N.B.
Fusarium epimyces, Cooke.
On *Scleroderma*. Reading.
Fusarium mucophytum, Sm. *Gard. Chron.* 1884, p. 245.
On Agarics. Huddersfield.

* *Sub.-Gen.* FUSISPORIUM, Link.

- Fusarium roseolum**, Steph. *Sacc. Syll.* 3363.
On potatoes. Forden, Bristol.
Fusarium bacilligerum, B. & Br. *Sacc. Syll.* 3370.
On leaves of *Rhynchos alaternus*. Spye Park (Wilts).
Fusarium heteronemum, B. & Br. *Sacc. Syll.* 3374.
On rotting pears. Batheaston.
Fusarium incarcerationans, Berk. *Sacc. Syll.* 3383.
In capsules of *Orthotrichum*. Handbook, No. 1868.
Fusarium Kuhnii, Sacc. *Syll.* 3384.
On lichens and mosses.
Fusarium salicinum, Corda. *Sacc. Syll.* 3391.
On willow branches. Twycross.
Fusarium rhabdophorum, B. & Br. *Sacc. Syll.* 3395.
On branches on *Valsa*. Forres, N.B.
Fusarium cucumerinum, B. & Br. *Sacc. Syll.* 3410.
On rotting cucumbers. Sibbertoft.
Fusarium equisetorum (Lib.). *Sacc. Syll.* 3416.
On *Equisetum*. Oswestry, N. Wootton.
Fusarium aurantiacum, Lk. *Sacc. Syll.* 3428.
On herbs. King's Cliffe, Twycross.

** *Sub.-Gen.* LEPTOSPORIUM, Sacc.

- Fusarium translucens**, B. & Br. *Sacc. Syll.* 3436.
On larch branches. Glamis, N.B.
Fusarium minutulum, Corda. *Sacc. Syll.* 3441.
On chips of hazel. St. Catherine's, Bath.
Pionnotes uda (Berk.). *Sacc. Syll.* 3468.
On trunks. King's Cliffe.
Pionnotes betæ (Desm.). *Sacc. Syll.* 3470.
On beetroot. Scotland, Scarboro', Apethorpe.
Microcera coccophila, Desm. *Sacc. Syll.* 3473.
On dead cocci on branches. Penzance.

TUBERCULARIÆ DEMATIEÆ.

- Epicoccum vulgare**, Ca. *Sacc. Syll.* 3482.
On stems. Kidbrooke.
Epicoccum granulatum, Penz. *Sacc. Syll.* 3484.
On *Sorghum cernuum*. Kew.
Epicoccum neglectum, Desm. *Sacc. Syll.* 3483.
On grasses. Scotland, Credinhill, Scarboro', Dublin, Goole,
Kew, Wiltshire, Shrewsbury.

Epicoccum diversisporum, *Preuss. Sacc. Syll.*

On reeds. Kew.

Epicoccum herbarum, *Ca. Sacc. Syll.* 3489.

On leaves. Kew.

Epicoccum micropus, *Corda. Sacc. Syll.* 3492.

On *Lactarius*. Ascot.

Epicoccum equiseti, *Berk. Sacc. Syll.* 3504.

On *Equisetum*. Fineshade.

Epicoccum purpurascens, *Sacc. Syll.* 3481.

On *Gynerium*. Kew.

Epidochium atrovirens, *Fr. Sacc. Syll.* 5338.

On branches. Shere, Haywood Common, Leatherhead.

Myrothecium roridum, *Tode. Sacc. Syll.* 3550.

On dead leaves. Appin.

Myrothecium inundatum, *Tode. Sacc. Syll.* 3552.

On dead Agaries. Appin, Downton.

Exosporium tiliæ, *Link. Sacc. Syll.* 3569.

On *Tilia*. King's Lynn.

EXOTIC FUNGI.

By M. C. COOKE.

Marasmius (Calopodes) jubæacola, *Cke.*

Pileo submembranaceo, convexo-expanso, obtuse umbonato, demum depresso, subrugoso, densissime furfuraceo, opaco, albido (circa 1 unc. lata), stipite deorsum subattenuato, fuligineo, sursum albido, striatulo, tenui, curvato, faretto (1 unc. long, 2 mm. crass), lamellis distantibus, latis, venoso-commexis, adnato-decurrentibus, albis; sporis clavatis, magnis $22 \times 6 \mu$.

On trunk of *Jubæa*. Jardin des Plantes, Paris.

Allied to *M. vaillantii* and *M. inoderma*, but differing essentially in the very large clavate spores, very unusual in this genus.

Tilletia verrucosa, *Cke. & Mass.*

Ovaris inflatis, pallido-fuscis. Sporis globosis, solitariis, fuscis (15-16 μ diam.), episporio verrucoso, verrucis obtusis.

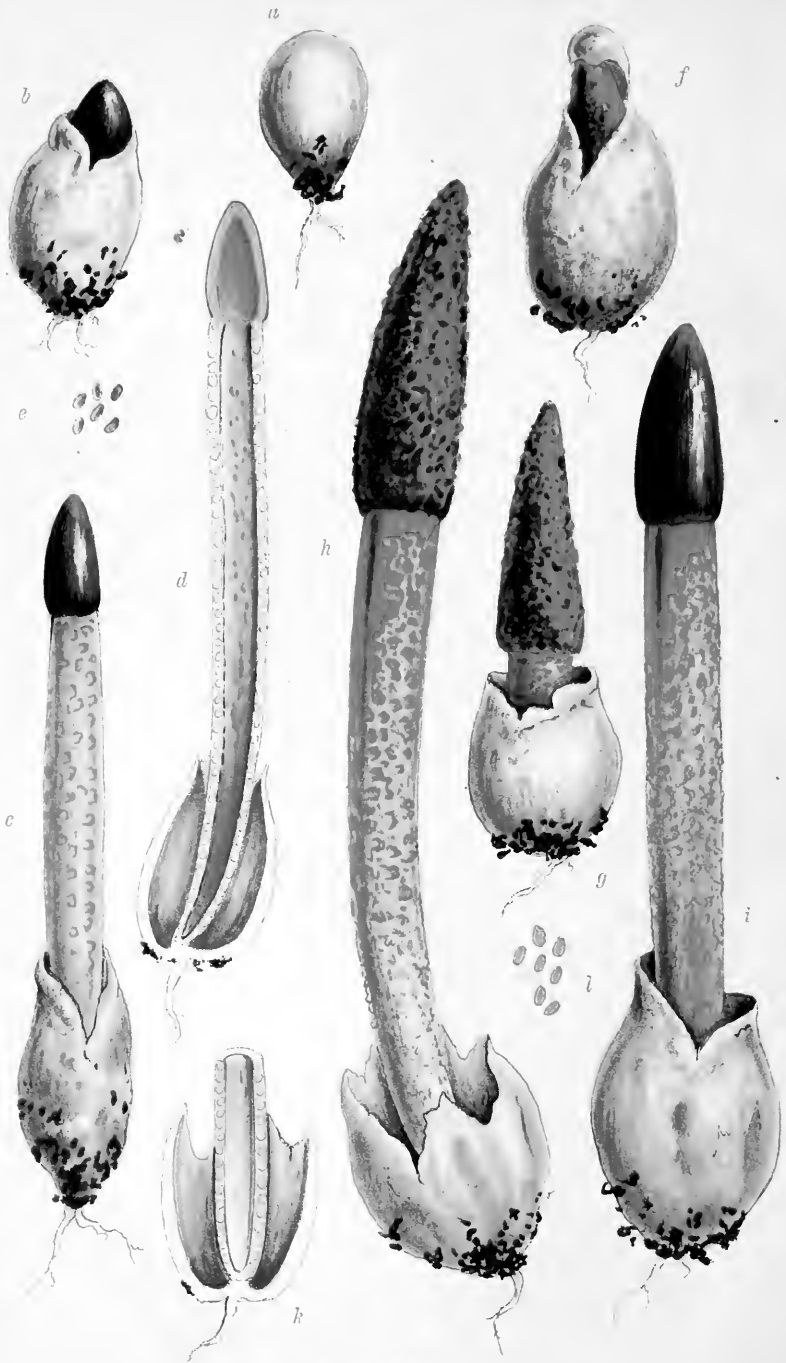
In the ovaries of *Panicum miliare* (Kirk).

Between Lupata and Tette, Tropical Africa.

Hydnum (Mesopus) aspratun, *Berk.*

Pileo carnosio, applanato, demum depresso, subinfundibuliformi, (5-6 unc. diam. vel ultra) azono, squamoso, umbrino. Stipite valido, crasso 3 in. long, 1 unc. crassa, quali vel deorsum attenuato, sulcato, pallido, glabro; aculeis acutis, decurrentibus, tenuibus, albo-fusciscentibus.

On the ground. Japan. Edible.



a — e MUTINUS CANINUS. *f — l* MUTINUS BAMBUSINUS.

MUTINUS BAMBUSINUS, IN BRITAIN.

Although the circumstance is somewhat unusual and inexplicable, it is nevertheless true that a genuine tropical species of *Phallus* has lately made its appearance in the open ground, amongst young plum trees in Noble's Nursery at Sunningdale. This particular species is *Mutinus bambusinus* (Zoll.), formerly called *Cynophallus bambusinus*, but changed in favour of an older generic name which has priority. How far it may be advisable to supersede a well-known, and generally-accepted, generic name in favour of another, simply on the ground of its antiquity, is a question we need not discuss.

By the kindness of Sir J. D. Hooker we examined a fresh specimen of this *Mutinus*, and were struck at once with the very strong and fœtid odour which escaped from the box in which it was enclosed, whereas our common *Mutinus caninus* is almost inodorous. The rosy stem and more elongated pileus were also striking. This species, of which a drawing and specimens may be found in the Berkeley Herbarium, from Java, was originally found and named by Zollinger, from its habit of growing at the base of bamboo clumps, in that island, and we are not aware of any other locality until it turned up so unexpectedly at Sunningdale. Whether the mycelium was imported with some of the exotics found in a large nursery and thus established itself may be probable, since it is doubtful whether it ever would have been found in this country except under such circumstances. The differences between the two species may be gathered from the following diagnoses:—

Mutinus caninus, Huds. *Fl. Angl.* ii., 630.

Whole fungus about 15 cm. high, inodorous. Stem white, or reddish, the walls consisting of one stratum of cavities. Capitulum short ($\frac{1}{5}$ – $\frac{1}{6}$ of the whole fungus), acutely digitaliform, flesh coloured, walls of the internal surface foveolate, apex pervious or impervious. Mass of spores dingy olive. Spores $6 \times 4 \mu$.

On the ground.

PLATE 173. *Fig. a*, in the egg state; *b*, just emerging; *c*, mature fungus; *d*, section of same; *e*, spores $\times 400$.

Mutinus bambusinus, Zoll. *Syst. Verz.* (1854), p. 11.

Whole fungus about 10 cm. high. Stem pallid rubiginous (or rosy), 6–8 mm. thick, the walls containing one stratum of cavities. Capitulum long (half the entire length), acutely conical, dingy purple, externally rugose, impervious at the apex. Mass of spores sooty olive, spores $6 \times 4 \mu$.

On the ground; originally at the base of bamboo clumps.

PLATE 173. *Fig. f*, emerging from the volva; *g*, further advanced; *h*, *i*, mature fungus; *k*, section of base; *l*, spores $\times 400$. *Figs. f, g, and k* from drawings of Javan specimens, by Kurz.; *h* and *i* from British specimens; *fig. k* from drawings by G. Massee.

MEMORABILIA.

SIPHOPYCHUM CASPARYI.—Having been called to account for our note on this species in Ellis' N. A. Fungi, we have examined it again, and find, as far as our copy is concerned, that the note was correct. There is no columella, and the spores are about half the diameter of those in true specimens sent by Dr. Rex and Dr. Farlow. Why the specimens are wrong in our copy is not for us to explain, and we can only rest upon the fact.

CORTICIUM CROCICREAS, B. & C.—The specimens issued in Ellis' N. A. Fungi, No. 2021, cannot be the true species, the microscopical characters of which are unmistakable and almost unique.—G. M.

CORTICIUM DRYINUM, B. & C., in Ellis' N. A. Fungi, No. 2020, as far as our specimens go, is *Corticium xanthellum*, B.—G. M.

HYMENOCHÆTE SPRETA, Peck, on the faith of the specimens No. 1936 in Ellis' N. A. Fungi is the same as *Hymenochæte unicolor*, Berk. & Curt., in Herb. Berkeley, from Cuba.

RETICULARIA MAXIMA of Fuckel's Fungi Rhenani, No. 1473, is *Amaurochæte atra* (A. & S.).

TILMADOCHÉ COLUMBINA (Berk.), in Ellis' N. A. Fungi, No. 2087, is quite distinct from the type specimen of *Didymium columbinum*, B. & C., in Herb. Berkeley, No. 10767.—G. M.

BADHAMIA HYALINA, P., in Ellis' N. A. Fungi, No. 1214, is the same as *Badhamia papaveracea*, Berk. & Rav.—G. M.

CRINULA PARADOXA, B. & Curt.—This is evidently not a fungus at all, but morbid cells, allied to *Erineum*.—G. M.

SYLLOGE ALGARUM.—Dr. J. B. de Toni has issued a prospectus of a proposed "Sylloge Algarum," similar in style and scope to the "Sylloge Fungorum" of Prof. Saccardo. He desires the names of subscribers, at the same price of one franc per sheet, addressed to Doct. J. B. de Toni, S. Moise, 1480, Venise (Italie).

BENTHALL'S DRYING PAPER.—Those who attempt to dry and preserve sections of the fleshy Fungi know how desirable it is to obtain a good and thoroughly absorbent drying paper. As far as our experience extends we know of none which can surpass or compete successfully with Benthall's Drying Paper, now supplied by the publishers of the "Journal of Botany," West, Newman, and Co., of Hatton Garden. The extra thick quality is so durable that it may be used over and over again for years.

SACCARDO SYLLOGE—HYPHOMYCETES.

As we have been unable to trace the following species in the Index to Vol. IV. of the "Sylloge," we direct attention to them in order that they may be incorporated in the next "Appendix."

- Cercospora adoxæ*, Roum. *Fungi Gall.* No. 1873.
Cercospora doronici, Pass. in Roum. *F. Gall.* 1873.
Cercospora grisea, C. & E. *Grevillea* v., p. 49.
Cercospora rhæi, Grog. in Roum. *F. Gall.* 2775.
Cercospora Therryana, Roum. *F. Gall.* 2264.
Cercospora calthæ, Cooke.
Cercospora longissima, Cooke & Ellis.
Heterosporium maculatum, Klotzsch. in *Herb. Kew.*
Dendryphium quadrisepatum, Cooke.
Sporidesmium vermiforme, Riess. *Fekl. F. Rhen.* 76.
Sporidesmium maculuræ, Thum. *Myc. Univ.* 2074.
Coniothecium anisoporum, Mont. *Ann. Sci. Nat.*, 1849, 57.
Coniothecium subglobosum, Cke.
Stemphylium fuscescens, Rabh. *F. Eur.* 1174.
Stemphylium polymorphum, Corda *Ic. i.*, f. 119.
Macrosporium abutilonis, Pass. in *Speg. Dec. M. It.* 58.
Macrosporium canificans, Thum. *Myc. An.* 2280.
Macrosporium chelidonii, Rabh. *Unio. Itin.* xxxvii.
Macrosporium caespitosum, Rabh. *Unio. Itin.* xxxii.
Macrosporium elegantissimum, Rabh. *Unio. Itin.* xxxv.
Macrosporium oleandri, Rabh. *Unio. Itin.* xxvii.
Macrosporium spaniotrichum, Rabh. *Unio. Itin.* xxix.
Macrosporium gramineum, Cooke in *Rav. Amer. Ex.* 606.
Macrosporium Ravenelii, Thum. *Myc. Unio.* 2071.
Macrosporium rubi, Ellis in *N. Am. Fun.* 544.
Macrosporium scirpi, Lasch. in Roum. *F. Gall.* 1994.
Macrosporium Zimmermanni, Roum. *F. Gall.* 396.
Gonytrichum fulvum, Ellis *N. Am. Fungi* 657.
Dicoccum pulchrum, Thum. *Myc. Univ.* 1878.
Steirochaete solani, Cusp. in Klot. *Hb. Myc.* 1980.
Sporodum asperum, Ces. in Rabh. *F. Eur.* 785.
Conoplea olivacea, Pers. *Syn. Fung.* 234.
Conoplea Eryngii, Pers. *Myc. Eur.* i., 11.
Circinotrichum murinum, Desm. *Crypt. Ex.* ii., 5.
Gyrotlrix pannosa, Ces. in Klot. *Hb. Myc.* 273.
Coniosporium arnicæ, Libert *Exs.* 382.
Coniosporium circinaus, Fr. *Sys. Myc.* iii., 257.
Cladosporium caespiticiun, Rabh. *F. Eur.* 579.
Cladosporium chaetomium, Cke.
Cladosporium diaphanum, Thum. *Myc. Un.* 1868.
Cladosporium dracænatum, Thum. *Myc. Un.* 1869.
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- Cladosporium microporum, *Rabh. Unio. Itin.* xlii.
 Cladosporium obtectum, *Rabh. Unio. Itin.* xxxvi.
 Cladosporium pelliculosum, *B. & C.*
 Cladosporium subnodosum, *Cke. in Rav. Amer. Ex.* 294.
 Cladotrichum simplex, *Cke.*
 Clasterosporium subulatum, *C. & Peck.*
 Clasterosporium hereuleum, *Ellis N. A. F.* 542.
 Helminthosporium avenaceum, *Curt.*
 Helminthosporium chyocarpum, *Ca. Fckl. F. R.* 1628.
 Helminthosporium collabendum, *Cke.*
 Helminthosporium gramineum, *Rabh. Hb. Myc.* 332.
 Helminthosporium Libertianum, *Roum. F. Gall.* 2894.
 Helminthosporium minimum, *Cke.*
 Helminthosporium palmetto, *Gerard.*
 Helminthosporium resinaceum, *Cke.*
 Helminthosporium reticulatum, *Cke. F. Britt. i.,* 360.
 Helminthosporium congestum, *B. & C.*
 Ramularia apiospora, *Speg. Dec. Myc. Ital.* 105.
 Fnsidium foliorum, *West, v. Lavandulæ, Thum. F. Austr.* 887.
 Fusidium stachydis, *Pass. in Thum. Myc. Un.* 1565.
 Ramularia verbasci, *Fckl. Thum. F. Aust.* 1176.
 Ramularia salviæ, *Roum. F. Gall.* 1394.
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 Ramularia loti, *Schrot. in Herb. Thumen.*
 Torula opaca, *Cke. in Ellis N. A. Fungi* 759.
 Torula salicis, *Fckl. F. Rhen.* 1622.
 Verticillium Therryanum, *Roum. F. Gall.* 2432.
 Verticillium Vizei, *Berk. in Vise Microfungi* No. 247.
 Verticillium puniceum, *Cke. & Ellis.*
 Nematogonum simplex, *Bon. Fckl. F. Rhen.* 149.
 Dactylium tenellum, *Fr. Sys. Myc. iii.,* 415.
 Dactylium tenuissimum, *Berk. Roum. F. Gall.* 3198.
 Botrytis brunneola, *Rabh. Hb. Myc.* 771.
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 Botrytis atrofumosa, *C. & E.*
 Sepedonium armeniacum, *B. & C.*
 Sporotrichum resinæ, *Fr.*
 Sporotrichum papyraceum, *Fckl. F. Rhen.* 2109.
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 Sporotrichum fallax, *Libert Crypt. Exs.* 187.
 Myxonema assimile (*Corda*), *Rabh. F. Eur.* 280.
 Fusidium leptospermum, *Pass. in Speg. Dec. M. I.* 54.
 Fusidium knautii, *Thum.*
 Fusidium vaccinii, *Fckl. F. Rhen.* 220, 221.
 Fusidium thalictri, *Thum. in Herb. Thumen.*

Fusidium salicis, *Fckl. Symb. Myc.* 370.
Monilia quadrifida, *Pers. Myc. Eur.* No. 11.
Monilia Libertiana, *Roum. F. Gall.* 2887.
Cylindrium minutissimum, *Rabh. Unio. Itin.* xxiv.
Oidium farinosum, *Cke. Græv.* xvi., 10.
Oidium radiosum, *Libert Crypt. Exs.* 285.
Oidium cratægi, *Grog. in Roum. F. Gall.* 881.
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Oidium laurocerasi, *Bert. Rev. Mycol.*, Oct., 1880.
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Oidium orobi, *Thum. F. Austr.* 539.
Oidium euphorbiæ, *Thum.*
Oidium succisæ, *Karl. Rabh. F. Eur.* 791.
Haplotrichum buxi (*Lib.*), *Roum. F. Gall.* 1446.
Aspergillus sulphureus, *Desm. Crypt. Exs.* 551.
Aspergillus nigriceps, *B. & C.*
Sterigmatocystis agaricini, *Specg. MSS.*
Haplaria Ellisii, *Cke.*

The following also are open to correction:—

Torula ovalispora, *Berk.*, is a true *Torula*.
Heterosporium echinulatum, *Berk.*, grows upon Monocotyledons,
 and is distinct from *H. exasperatum*.
 1721 *Cladosporium pallidum*, *B. & C.* = *Cercospora*.

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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

SYNOPSIS PYRENOMYCETUM.

(Continued from Vol. XVI., p. 92.)

Fam. 11. LOPHIOSTOMACEÆ. Perithecia subsuperficialia, ostioli compresso, plus minusve lato, rimoso.

GEN. 1. **LOPHIOSPHERA**, *Trev.* Sporidia oblonga v. fusoidea, hyalina.

A. *Sporidiis uniseptatis, muticis.*

- | | |
|--|---|
| 3529. viticola, <i>Sacc.</i> ... 5409 | 3534. intricata, <i>Nke.</i> ... 7518 |
| 3530. querceti, <i>S. & S.</i> ... 5407 | 3535. Beckhausii, <i>Nke.</i> ... 7519 |
| 3531. lignicola, <i>Sacc.</i> ... 5408 | 3536. perpusilla, <i>Sacc.</i> ... 5410 |
| 3532. hysterioides, <i>Schuz.</i> 5523 | 3537. schizostoma, <i>Mont.</i> 5406 |
| 3533. vigheffulensis,
<i>Pass.</i> ... 7344 | |

B. LAMBOTTIELLA. *Sporidiis uniseptatis, appendiculatis.*

- | | |
|---|--|
| 3538. pulveracea, <i>S.</i> ... 5414 | 3541. Fuckelii, <i>Sacc.</i> ... 5415 |
| 3539. heterostoma, <i>Ell. & Er.</i> ... 7520 | 3542. anaxæa, <i>Sacc.</i> ... 5411 |
| 3540. bonariensis, <i>Speg.</i> 5413 | 3543. glacialis, <i>Rehm.</i> ... 5412 |

C. LOPHIOTRICHA. *Peritheciis pilosis, sporidiis uniseptatis.*

3544. viburni, *Rich.* ... 7345

D. LOPHIOTREMA. *Sporidiis 2-pluriseptatis.*

* *Sporidiis muticis.*

- | | |
|---|--|
| 3545. simile, <i>Nke.</i> ... 7521 | 3555. lonicerae, <i>Fab.</i> ... 5421 |
| 3546. hederæ, <i>Fekl.</i> ... 5416 | 3556. cotini, <i>Fab.</i> ... 5422 |
| 3547. recedens, <i>Sch. & S.</i> 7346 | 3557. rubidum, <i>Sacc.</i> ... 7348 |
| 3548. duplex, <i>K.</i> ... 5417 | 3558. littorale, <i>Speg.</i> ... 5423 |
| = <i>corticivora</i> , <i>Rehm.</i> | 3559. coryli, <i>Fab.</i> ... 5424 |
| 3549. Notarisii, <i>Nke.</i> ... 7522 | 3560. glandium, <i>Fab.</i> ... 5425 |
| 3550. leucosporum, <i>Nke.</i> 7523 | 3561. stenogramma, <i>D.</i> |
| 3551. nucula, <i>Fr.</i> ... 5419 | <i>R. & M.</i> ... 5426 |
| 3552. Cookei, <i>Nke.</i> ... 7524 | 3562. præmorsum, <i>Lasch.</i> 5427 |
| 3553. pallidum, <i>Ell.</i> ... 7347 | 3563. hungaricum, <i>Rehm.</i> 6178 |
| 3554. crenatum, <i>Pers.</i> ... 5420 | 3564. semiliberum, <i>Desm.</i> 5428 |

3565. culmifragum, *Sp.* 5429 3575. ampelinum, *Rehm.* 5438
 3566. pusillum, *Fckl.* ... 5430 3576. pygmæum, *S.* ... 5439
 3567. artemisiæ, *Fab.* ... 5431 3577. cadubriæ, *Sp.* ... 5440
 3568. sexnucleatum, *Cke.* 5432 3578. alpigenum, *Fckl.* 5441
 3569. serophulariæ, *Peck.* 5433 3579. massarioides, *Sacc.* 5442
 3570. thymi, *Fab.* ... 5434 3580. spireæ, *Peck.* ... 5443
 3571. vagabundum, *S.* ... 5435 3581. Thumenianum, *Sp.* 5444
 3572. emergens, *K.* ... 7349 3582. Mollerianum, *Wint.* 7350
 3573. origani, *Kze.* ... 5436 3583. socotrense, *Cke., Trans.*
 3574. helichrysi, *Fab.* ... 5437 *Roy. Soc. Edin.,* 1888

** VIVIANELLA. *Sporidiis appendiculatis.*

3584. sedi, *Fckl.* ... 5445 v. genistarum, *S.*
 3585. affine, *Sp.* ... 5446 3588. Winteri, *S.* ... 5449
 3586. cristatum, *Fab.* ... 5447 3589. auctum, *S.* ... 5450
 3587. angustilabrum, *B.*
 ♂ *B.* 5448

* * * LOPHIOMEMA. *Sporidiis filiformibus, septatis.*

3590. vermisporum, *Ellis* 5552 3591. crenatum, *Schw.*

GEN. 2. **LOPHIOSTOMA.** *Sporidia fusca.*

* LOPHIELLA. *Sporidia navicularia.*

3592. cristata, *Pers.* ... 5397

* * * SCHIZOSTOMA. *Sporidia bilocularia.*

3593. montelicum, *Sacc.* 5398 3598. tuyutense, *Sp.* ... 5403
 3594. vicinum, *S.* ... 5399 3599. pachythele, *B. & Br.* 5404
 3595. vicinissimum, *Sp.* 5400 3600. Schomburgkii, *B.* 5405
 3596. Bellunense, *Sp.* ... 5401 3601. microsporum, *Pass.* 7343
 3597. vicinellum, *S.* ... 5402

* * * GENUINA. *Sporidia 3-pluriseptata.*

A. Eu-lophiostoma.

† *Sporidia triseptata.*

3602. stenostomum, *Ell.* 3611. cultum, *Nke.* ... 7527
 ♂ *Ev.* 7351 3612. corni, *Pass.* ... 7353
 3603. quadrinucleatum,
 K. 5451 3613. viridarum, *Cke.* ... 5457
 3604. rhopaloides, *Sacc.* 5452 3614. isomerum, *Nke.* ... 7528
 3605. Barbeyanum, *S. & R.* 7352 3615. triseptatum, *Peck.* 5458
 3606. absconditum, *Pass.* 5453 3616. rubicolum, *Nke.* ... 7529
 3607. cæspitosum, *Fckl.* 5454 3617. subcollapsum, *Ell.*
 ♂ *Ev.* 7525
 3608. argentinum, *Sp.* ... 5455 3618. maculans, *Fab.* ... 5459
 3609. demissum, *Nke.* ... 7526 3619. fallax, *Fab.* ... 5460
 3610. dumeti, *Sacc.* ... 5456 3620. fallacissimum, *K.* 7354

3621. <i>syringæ</i> , <i>Fab.</i> ...	5461	3626. <i>granulosum</i> , <i>Cr.</i> ...	5466
3622. <i>juniperi</i> , <i>Fab.</i> ...	5462	3627. <i>Desmazierii</i> , <i>S. & S.</i> ...	5467
3623. <i>Requieni</i> , <i>Fab.</i> ...	5463	3628. <i>insculptum</i> , <i>Rehm.</i> ...	5468
3624. <i>acervatum</i> , <i>K.</i> ...	5464	3629. <i>striatum</i> , <i>Sacc.</i> ...	7355
3625. <i>rhizophilum</i> , <i>B. & C.</i> ...	5465	3630. <i>floridanum</i> , <i>Ell & Ev.</i> ...	7356

†† *Sporidia 4-vel pluriseptata.*

3631. <i>macrostomoides</i> , <i>Not.</i> ...	5469	3651. <i>Stuartii</i> , <i>Fab.</i> ...	5485
3632. <i>perversum</i> , <i>Not.</i> ...	5470	3652. <i>arundinis</i> , <i>Fr.</i> ...	5486
= <i>quercini</i> , <i>Rehm.</i>		3653. <i>brachypodii</i> , <i>Fab.</i> ...	5487
3633. <i>pseudo macrosto-</i> <i>mum</i> , <i>S.</i> ...	5471	3654. <i>crista-galli</i> , <i>D. & M.</i> ...	5488
= <i>Lojkanum</i> , <i>Rehm.</i>		3655. <i>collinum</i> , <i>Sp.</i> ...	5489
3634. <i>myriocarpum</i> , <i>Fckl.</i> ...	5418	3656. <i>berberidis</i> , <i>Nke.</i> ...	7530
3635. <i>Fleischakii</i> , <i>Awd.</i> (sec. <i>Winter</i>)		3657. <i>ligustri</i> , <i>Nke.</i> ...	7531
3636. <i>oreophilum</i> , <i>Sp.</i> ...	5472	3658. <i>vexans</i> , <i>Nke.</i> ...	7532
3637. <i>pinastri</i> , <i>Nssl.</i> ...	5473	3659. <i>anisomerum</i> , <i>Nke.</i> ...	7533
3638. <i>turritum</i> , <i>C. & P.</i> ...	5474	3660. <i>galeopsidis</i> , <i>Nke.</i> ...	7534
3639. <i>prominens</i> , <i>Peck.</i> ...	5475	3661. <i>spartii</i> , <i>Nke.</i> ...	7535
3640. <i>fibritectum</i> , <i>B.</i> ...	5476	3662. <i>biforme</i> , <i>Nke.</i> ...	7536
3641. <i>simile</i> , <i>Nke.</i> ...	5477	3663. <i>galii</i> , <i>Nke.</i> ...	7537
3642. <i>subcorticalis</i> , <i>Fckl.</i> ...	5408	3664. <i>dipsaci</i> , <i>Nke.</i> ...	7538
3643. <i>ericarum</i> , <i>Fab.</i> ...	5478	3665. <i>prominens</i> , <i>Nke.</i> ...	7539
3644. <i>scelestum</i> , <i>C. & E.</i> ...	5479	3666. <i>palustre</i> , <i>Nke.</i> ...	7540
3645. <i>macrostomellum</i> , <i>Ces.</i> ...	5480	3667. <i>parvulum</i> , <i>Nke.</i> ...	7541
3646. <i>mendax</i> , <i>Not.</i> ...	5481	3668. <i>phragmitis</i> , <i>Nke.</i> ...	7543
3647. <i>caulium</i> , <i>Fr.</i> ...	5482	3669. <i>Sauteri</i> , <i>Nke.</i> ...	7543
3648. <i>centranthi</i> , <i>Duby.</i>		3670. <i>nigricans</i> , <i>Nke.</i> ...	7544
3649. <i>vagans</i> , <i>Fab.</i> ...	5483	3671. <i>Nitschkei</i> , <i>Lehm.</i> ...	7545
3650. <i>characiæ</i> , <i>Fab.</i> ...	5484	3672. <i>typhæ</i> , <i>Nke.</i> ...	7546
		3673. <i>commutatatum</i> , <i>Nke.</i> ...	7547
		3674. <i>ulicis</i> , <i>Nke.</i> ...	7548
		3675. <i>diaporthæ</i> , <i>Nke.</i> ...	7549
		3676. <i>lappæ</i> , <i>Nke.</i> ...	7550

B. NAVICELLA. *Species majores.* *Sporidia mutica*, pluriseptata.

3677. <i>macrostomum</i> , <i>Tode</i> ...	5490	3683. <i>magnatum</i> , <i>C. & P.</i> ...	5495
3678. <i>excipuliforme</i> , <i>Fr.</i> ...	5491	3684. <i>dolabriforme</i> , <i>Fr.</i> ...	5494
3679. <i>congregatum</i> , <i>Hark.</i> ...	7357	3685. <i>julii</i> , <i>Fab.</i> ...	5496
3680. <i>Balsamianum</i> , <i>Not.</i> ...	5492	3686. <i>elegans</i> , <i>Fab.</i> ...	5497
3681. <i>pileatum</i> , <i>Tode</i> ...	5493	3687. <i>salicum</i> , <i>Fab.</i> ...	5498
3682. <i>Bommerianum</i> , <i>S. & R.</i> ...	7358	3688. <i>ulmi</i> , <i>Fab.</i> ...	5499
		3689. <i>Gaudefroyi</i> , <i>Fab.</i> ...	5500
		3690. <i>macrosporum</i> , <i>Sp.</i> ...	5501

C. ROSTELLA. *Sporidia appendiculata.*

- | | |
|---------------------------------------|--------------------------------------|
| 3691. insidiosum, <i>Desm.</i> 5502 | 3698. rutæ, <i>Fab.</i> ... 5508 |
| 3692. gramineum, <i>S.</i> ... 5503 | 3699. silai, <i>Fab.</i> ... 5509 |
| 3693. intermedium, <i>S.</i> ... 5504 | 3700. cynopis, <i>Fab.</i> ... 5510 |
| 3694. Niessleanum, <i>S.</i> ... 5505 | 3701. appendiculatum, |
| 3695. menthæ, <i>Kirch.</i> ... 5506 | <i>Fckl.</i> ... 5511 |
| 3696. roseotinctum, <i>Ell.</i> | 3702. papillatum, <i>Pass.</i> 7360 |
| & <i>Ev.</i> ... 7359 | 3703. bicuspidatum, <i>Oke.</i> 5512 |
| 3697. ruscicola, <i>Fab.</i> ... 5507 | 3704. simillimum, <i>K.</i> ... 5513 |

D. BRIGANTIELLA. *Sporidia caudata.*

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|--------------------------------------|--------------------------------------|
| 3705. caudatum, <i>Fab.</i> ... 5514 | 3706. dacryosporum, <i>Fab.</i> 5515 |
|--------------------------------------|--------------------------------------|

E. *Species dubiæ.*

- | | |
|--------------------------------------|---|
| 3707. ventricosum, <i>Pers.</i> 5516 | 3713. truncatum, <i>Pers.</i> 5522 |
| 3708. ntrculus, <i>Reb.</i> ... 5517 | 3714. thapsi, <i>Schwz.</i> ... 5524 |
| 3709. hysterinum, <i>Wall.</i> 5518 | 3715. variabile, <i>Schwz.</i> ... 5525 |
| 3710. liberum, <i>Tode.</i> ... 5519 | 3716. abbreviatum, |
| 3711. cirrhosum, <i>N.</i> ... 5520 | <i>Schwz.</i> ... 5526 |
| 3712. subrugosum, <i>Schw.</i> 5521 | |

GEN. 3. **LOPHIDIUM**, *Sacc.*—*Sporidia muriformia, fusca.*

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|--------------------------------------|---|
| 3717. tingens, <i>Ell.</i> ... 5527 | 3732. nukuloides, <i>S.</i> ... 7362 |
| 3718. scorpii, <i>Fab.</i> ... 5528 | 3733. ambiguum, <i>Fab.</i> ... 5540 |
| 3719. cotini, <i>Fab.</i> ... 5529 | 3734. curtum, <i>Fr.</i> ... 5541 |
| 3720. minus, <i>Ellis</i> ... 6179 | 3735. diminuens, <i>P.</i> ... 5542 |
| 3721. spartii, <i>Fab.</i> ... 5530 | 3736. pachysporum, <i>S.</i> 5543 |
| 3722. compressum, <i>P.</i> ... 5531 | 3737. thyridioides, <i>S. & S.</i> 5544 |
| = <i>angustata</i> , <i>P.</i> | 3738. psilogrammum, <i>D.</i> |
| 3723. pseudo-compres- | <i>R. & M.</i> ... 5545 |
| sum, <i>S. & B.</i> ... 7361 | 3739. fenestrale, <i>C. & E.</i> 5546 |
| 3724. nobile, <i>S.</i> ... 5532 | 3740. fraudulentum, <i>D.</i> |
| 3725. deflectens, <i>K.</i> ... 5533 | <i>R. & M.</i> ... 5547 |
| 3726. subcompressum, <i>K.</i> 5534 | 3741. ruborum, <i>Cr.</i> ... 5548 |
| 3727. graphidosporum, | 3742. aromaticum, <i>Fab.</i> 5549 |
| <i>Anzi.</i> ... 5535 | 3743. santolinæ, <i>Fab.</i> ... 5550 |
| 3728. ramorum, <i>Nke.</i> ... 5536 | 3744. hygrophilum, <i>S.</i> ... 5551 |
| 3729. obtectum, <i>Peck</i> ... 5537 | 3745. brachystomum, |
| 3730. gregarium, <i>Fckl.</i> 5538 | <i>Nke.</i> ... 7551 |
| 3731. populi, <i>Fab.</i> ... 5539 | 3746. Crouani, <i>Nke.</i> ... 7552 |

NOTES AND QUERIES ON RUSSULÆ.

By M. C. COOKE.*

Apology of some kind seems necessary for the introduction of technical papers at unseasonable times, but opportunity has for the past two years been exceptionally rare for the consideration of

* Paper read at the Woolhope Field Club, Oct. 4, 1888.

technical subjects at the Woolhope Foray, and although dinners and soirées may, in a sense, be degraded from their high office by such an interpolation, it is a deed of necessity which excuses the demoralization.

Opportunities for the discussion, face to face, amongst mycologists of points of difficulty are exceedingly rare, and indeed the present is almost the only chance from year to year of "settling up," so that it is almost too great a sacrifice to expect us to abandon it without a struggle. Into whatever branch of Natural History a person plunges, it is inevitable that the deeper he goes the more subtle will be the difficulties he encounters, and probably, at the same time, the keener will be his sense of the reconciliations which may be effected. Experience is a much more efficient guide than books, but this source of knowledge has no efficiency except for the individual, if driven to isolation, or condemned to a persistent monopoly of the results. It matters not that one has struggled with difficulties for years, until perhaps he sees bright glimpses of light through the darkness, if he is to die and make no sign. Labour will have been useless, save to him, if he fails to communicate to others his hopes and fears, his interpretations of dimly discerned facts, or his suspicions of accepted tradition. This may be received as the best apology which can be offered for an unwelcome intrusion, and, with such a prospect before us, for the succeeding ten minutes we can only advise the uninterested to close their eyes for that brief period, and sink into the oblivion of profound repose. It will be admitted, without proof, that the study of the genus of *Russula*, amongst Fungi of the Mushroom type, is one which has been regarded as about the most difficult. Of course there are difficulties everywhere, especially when no effort is made to surmount them, but the difficulties in the way of the determination of species, with any degree of personal satisfaction, in this peculiar genus must be tried to be appreciated. *Cortinarius* has its difficulties, for example, but they appear to dwindle in the face of those which beset *Russula*. This genus, nearly all the species of which were in the remote past lumped together under the one name of *Agaricus integer*, is remarkable in many particulars, but in none more than in the general sameness of habit, home, and structure, and the great variety of their coloration. None of the Agaricini present more brilliant colours, or in greater variety, and none perhaps less diversity in form. This seems to be an initial difficulty, for if form varies so little, and colour is not to be relied upon, how is determination to be accomplished? It may be affirmed that, at the outset, there is less difficulty in fixing the genus than in almost any other, for the merest tyro is soon able to declare this or that to be a *Russula*, when he would be puzzled over a *Marasmius* or a *Cortinarius*. With a *Russula*, then, pure and simple, there is no difficulty. No one ever encounters a difficulty of that sort, but when you ask "What *Russula*?" then you are face to face with the "cardinal sin." It is the determination of the species of

Russula that puzzles the best of us. And why? Because of the absence of broad distinctive features which assist so much in other groups. There are no caespitose species, for all are solitary. There are no lignicolous species, for all are terrestrial. There are no squamose or scaly species, for all are more or less smooth. Hence the characters by which one species may be distinguished from another in other groups are in this reduced to a minimum, so that they have to be supplemented by other and new distinctions which prevail here, but are not recognized, or but faintly elsewhere. Another cause of difficulty, in my mind, exists in the undue limitation of species or varieties. It is of no consequence whether one regards them as species, and another as varieties, the thing needed is a definite isolation of distinct forms, so that any species or individual met with can without difficulty be set in its proper place. The species recognized by Fries may all be good enough species as he understood them, but his diagnoses are often too general, and embrace too much for ordinary use. The average mycologist requires more than the diagnoses of Fries will give. In some instances, perhaps, the species will cover only a reasonable range, such as *Russula fellea*, *Russula sanguinea*, *Russula lutea*, *Russula nigricans*, and *Russula depallens*, with some others, but constantly individuals are met with, such as those named recently as *Russula Barla*, *Russula punctata*, *Russula granulosa*, *Russula drimeia*, which would puzzle anyone who attempted to place them under the species of Fries. No alternative exists, as it seems to us, but to increase the number of recognized forms if the identification of *Russulæ* is to be accomplished with anything like success by the average mycologist. Let it not be understood that we advocate an indiscriminate manufacture of new species, we would recommend that only such individuals should be referred to a species as the description will fairly cover, and that forms aberrant from these should be clearly recognized and indicated by definite names.

Here it may be inquired, What are the features to be taken into account in the characterization of species in the genus *Russula*? Perhaps on the answer to this question the gist of the subject depends. There could be no objection to take one of the *diagnoses* of Fries and accept that as sufficient indication of the characters to be recognized. Bear in mind that we state expressly one of the "diagnoses" of Fries, leaving out all question as to the individuals which those diagnoses have hitherto been made to cover, because they have been made to cover at least twenty fairly good species, which have lately been separated, and may possibly include as many more. The characters seem to be the following, as they stand in Fries:—Taste—pileus, form and character (Fries always has excluded colour from the diagnosis of the pileus)—cuticle—margin—stem, without and within—gills—form, attachment and colour—and in some instances odour. Taking first for comment *taste*, and *odour*. It may be urged that these should be regarded

as *accessory*, rather than *principal*, or at least applied with judgment, and not absolutely. Because, there is no more foetid a species than *R. fœtens* and no species so unmistakable, it remains without dispute that *R. fœtens* would never be confounded by even a young mycologist, without smelling it, to anything else. Within the past ten years we have occasionally had specimens of *R. fœtens* which had no foetid odour (a fact which might be accounted for), but on the contrary were positively fragrant, as strong and as pleasant as the odour of *Agaricus odoratus*, from which the odour could not be distinguished. This was corroborated this year in Epping Forest by Mr. Massee, where he remarked the same phenomenon. *Apropos* of odour, we encountered on one occasion a specimen of *Phallus impudicus* from which all the slimy green matter had disappeared, and all that was left was nearly as white as ivory and of a most pleasant odour, reminding one strongly of violets. Exception has been taken to this fact, when the circumstance has been alluded to, and although we have suffered under the imputation of "drawing the long bow" for fifteen years at least (when this experience was encountered), it will perhaps one day be admitted, by those who think they know everything that is possible for Nature to accomplish, that there really was once such a miracle performed as a *Phallus* with the odour of violets, as well as *Russula fœtens* resembling anise.

Odour must, therefore, always have some latitude, more especially those odours, the appreciation of which, like that of female beauty, resides so much in the nose and eyes of the spectator. There is hardly any odour associated with fungi, good, bad, or indifferent, in which more than two persons can be found at the same time to agree. Nearly all will admit the odour, but not the same odour. For example, there is an odour prevalent amongst *Lactarii*. Let anyone put it to the test. No. 1 says "odour of bugs," No. 2 says "fenugrec," No. 3 says "Ligusticum," No. 4 says "empyreumatic," No. 5 says "camphor," No. 6 diluted "asafoetida," and so on through a considerable range of obscure odours, but never more than about two will accord in ascribing it to the same odour. If in odour, so also in taste, even more than odour, there must be catholicity. *Russula rubra* is very acrid, no doubt about it, when in a really prime condition. Then even the most inveterate smoker will confess it a thorough "pick me up" for its pungency. How, then, can we explain the fact that at Breinton some years since, and at Epping Forest this year, a *Russula* precisely identical in all external features, and those of a remarkable character, should to the taste prove as mild and pleasant as a new filbert. It improves the case very little to say that the mild *Russula* was figured by Krombholz, and called *Russula atropurpurea*, which Fries included as a variety of *Russula integra* at one time, and at another hinted it as a mild aberrant *Russula emetica*. Must taste go for nothing? Certainly that is *not* our opinion. But it should hardly supersede every and all other features. Here is a

case in point. Is *Russula atropurpurea* only a mild form of the acrid *Russula rubra*, with which it appears to accord in everything but taste, or are the two to be maintained as *distinct* upon the faith of one sole and single character? Let each be persuaded in his own mind, all we desire to contend for is this, that for the sake of the inexperienced mycologist, both of the present and future, such anomalies should *not* be ignored, but placed upon record, either as forms or varieties. As a general rule the distinctions "mild" and "acrid" hold fairly well both in *Lactarius* and *Russula*, and, we think, are as reasonably permanent as any other character, for absolute permanency is a dream of the past; "slowly acrid," "mild then acrid," will always suffer some interpretation akin to non-recognition, a sort of neutral character, of no intrinsic value. Faint odours and uncertain tastes are valueless, except to mislead, and this implies condemnation of the method adopted by some persons in making it to form part of their characteristic diagnosis of new species that its "odour reminds one of the rose," or "faintly aromatic," or "calling to mind the perfume of melilot." These are all very well to put in a foot note, but they are too volatile and uncertain for a diagnosis, and certainly are out of place in such a genus as *Russula*, where, with the single exception of *Russula fetens*, decided odours, except the fishy odour associated with decay, are generally conspicuous by their absence.

Unfortunately, throughout *Russula*, spore character is of the most limited value in specific identification. There is such a close similarity that the minute distinction of one or two micromillimetres is practically useless. The common type of a rough sub-globose spore of about $10\ \mu$ prevails, seldom, perhaps, completely globose, but seldom exceeding more than 1 to $2\ \mu$ in one direction over the other. The occasional occurrence of a species with entirely smooth spores, if confirmed at all ages, would be exceptional, and add to the value of the character.

Colour of gills and spores require more careful consideration than some of us have given to them. The decided gills of *Russula lutea*, *Russula armeniaca*, and *Russula drimeia*, with some others, could not be overlooked, but there are species, several of them, including some forms of *Russula integra*, in which living and vigorous plants show no tinge of yellow when gathered, but after resting all night and drying, the gills and the deposited spores will exhibit too decided an ochraceous tint to be disregarded. It scarcely need be said that we hold no doubt on this point, that the colour of the spores, if a decided colour and not a faint tinge, can never be disregarded. The same species, however similar in other respects, cannot be accepted with white and with ochraceous spores; perhaps each section of the genus, as recognized by Fries, would be much better, for working purposes, if divided, as the *Fragiles* section is divided, into sub-sections *Leucospori* and *Xanthospori*. In passing, it may be urged that it does not follow that because the gills have, or seem to have, a tinge of colour, the spores are necessarily coloured.

There are instances in which the gills are tinted more or less, but the spores are as white as in species which have permanently white gills.

The colour of the pileus deserves some remark. It has been considered hitherto that colour in the pileus is so very variable in this genus that it is absolutely valueless. No doubt this idea originated in the days when all *Russulæ* came under one or two species. Ultimately we venture to think that colour will be accepted to be as permanent in *Russula* as in *Amanita* or *Hygrophorus*—taking “permanent” to mean persistency in the same tones of colour in the different species. Many of the colours are very bright, and in some instances is confined to a thin cuticle, so that decoloration, more than usual, may be looked for, but this is a discharge of colour, and not an alteration of colour. And to a limited extent the turning yellow or the darkening of tints by age, moisture, or decay, would be regarded as natural changes, the original tone being preserved, and not a variation of colouring in the general acceptation of that term.*

Some of the high-coloured and over-coloured figures of *Russula*, in the books of the early part of the present century, helped to keep alive the notion of the very great variability of colour in this genus, whereas the undoubted fact is, that a great deal of the variability existed in the minds of the several authors, and the paint boxes of their artists. No figures of “Champignons” have been so exaggerated and overdone as *Russula*; in fact, many of them are only caricatures. Impossible greens, cœrulean blues, and reds gone mad characterize the majority. There is no more hopeless task than the attempt to classify under their respective species the legion of figures of *Russula*, which have dazzled the world. Illustrating our thesis that coloration in *Russula* is not such an indefinite and intangible thing as some have alleged, we will take one or two of the worst species.

First and foremost, one of the most protean in colour, as understood by Fries, was *Russula fragilis*. Judging from the figures, it is green, green and pink, pink, scarlet, crimson, purple, violet, red-brown, yellow, ochraceous, and white, and perhaps something more. First of all we strike out *green*, as no ingredient, wholly or in

* It was our intention to have remarked upon the loose application sometimes made of the two words “decoloration” and “discoloration,” and must do so in a foot note. We would contend that they do not imply the same thing, and should be recognized at their true value. “Discoloration” may be an alteration of colour, from one colour to another, as a purple disc may be discoloured brown, or a pink edge turn foxy, but we contend that this is not “decoloration,” which is a process of blanching, or discharge of colour like that which takes place in *Russula depallens*. Hence “discoloration” may be a change of colour, but “decoloration” an absolute loss of colour. It is by a clear definition of terms that something will be done to facilitate study, and even this remark need not have been made, but that some persons who have written books appear to interpret both words alike.

part, of any form of *Russula fragilis*. What it was intended for we do not attempt to determine. Yellow is now represented by *Russula citrina* of Gillet. Violet by *Russula violascens* of Secretan, the ochraceous form, which seems to have been mild, and, therefore, not *Russula fragilis* at all, by *R. fingibilis*, Britz. The white is, of course, the *Russula niveus* of Persoon, and may be only an etiolate form, and then we have still left only the different shades of red, which now are held to constitute the species *Russula fragilis*. In its deepest tints it may verge on rosy scarlet, or crimson, but through all gradations of tints the tone remains the same, now and then spotted with bleached places, where exposed to strong light, and as decay commences the blanched cuticle turns yellowish, or foxy, not resulting from mutation of colour, but decay in the cells. Here, then, we have that variable species *Russula fragilis* simply reduced to a red species, subject to blanching and spotting by exposure to light, like as all the other bright species are liable to similar accidental change.

Of *Russula integra* and *Russula alutacea* we will venture to say nothing at present, because up to now our opportunities have been few, and those chiefly in the direction of finding a well-defined limit between two such similar species.

Russula cyanoxantha appears to be one of our commonest species, and *R. heterophylla* one of the most uncommon, if the diagnosis of Fries is to be relied upon, and not tradition. Doubtless *Russula cyanoxantha* does present in its extremes of intensity, and size, strange contrasts, but were the most sceptical to collect all the specimens possible during a whole day, until they numbered at least one hundred good sound specimens, as we have done in this current year, it is doubtful if their mind would ever be troubled with scepticism again in respect of this species. With a pileus from $1\frac{1}{2}$ in. to near six inches in size, from the faintest blush of colour to the deepest tints, and yet unity in all such seeming variety. Intrinsically a margin with a rosy tone, more or less sobered with purple, a pale disc, and between the two a dark zone of dull indefinable mixture of neutral green with purple, and that is the type for all the specimens we can meet with of *R. cyanoxantha*. The infinite variety being made up, not of any change of colours or their position, but simply of their greater or less intensity, the part occupied by the median zone being streaked in a radiate manner by darker lines, either quite smooth or palpably rugose.

Some may remark that there is no difficulty in that species, but it is otherwise with *R. heterophylla*. And here it may only be individual opinion, and so must be rated just at what it is worth, but we think two forms of *R. heterophylla* may be recognized, keeping in mind the strict limit imposed by Fries of "*Lamellis angustissimis, confertissimis.*" These two forms, both of which are uncommon, correspond to the *Russula heterophylla*, Fries, for the greenish forms, and *Russula heterophylla*, Bulliard (t. 509, f. O.),

for the brown forms, each characterized by very much crowded and very narrow white gills.

We presume that there always will be, with the most carefully arranged classification of species, instances occurring in the experience of all, of isolated individuals which it is difficult to place. It is a common occurrence, perhaps, with the most experienced, but even in such cases, wherever careful drawings have been kept, time may provide the missing link. As a rule, it is doubtful whether these isolated individuals are worth the labour they entail, because they are mostly isolated, and the result of some accidental variation. Whereas it is with constantly recurring, and reasonably permanent, types that our best time will be spent.

The only other species to which we shall now allude is *R. xerampelina*, not at all a common one, and perhaps sometimes carelessly referred to *R. integra*. As to the colour of the pileus, all the variability seems to be in the intensity of the marginal colour, the disc holds its character of tawny yellow, verging on reddish brown, broken up into little punctiform scales. The marginal tint is purple, with more or less admixture of red or brown, but differing, as in other species, more in the intensity of the colour than in any variation in the elemental colours. There need be no hesitation with such a well defined species, when sufficiently mature to see the characteristic features of the disc, combined with the form and tint of the gills.

Of the coloration of the stem little can be said of any of the species in which it occurs. It is rarely constant, especially where the colour is red; species, such as *R. Queletii*, in which it is purple, are more invariable, and those in which the stem becomes grey, *R. depallens*, *R. ochroleuca*, etc., the stem is at first white, and the grey colour is acquired by age, and is always faint, but indisputable.

Before leaving the stem, it may be pertinent to observe that in the diagnosis of some species considerable emphasis is placed on the rugosity of the stem. It is not infrequent to read that the stem is reticulately rugose. Admitted that it is more strongly marked in some species than in others, yet it appears to us that if a lens is employed, as it often is by an enthusiastic mycologist, he will probably grow sceptical as to whether there is such a thing as a species of *Russula* with a perfectly even stem, free from striæ in all ages and conditions. If so they are, at least, more rare than absolutely rugose stems.

Internal changes of colour, or discoloration of the flesh, seems to be a valuable character, where it assumes a positive and definite tone, and does not bear the impress of caprice, as often appears to be the case in externally coloured stems. *Russula nigricans*, *R. densifolia*, *R. semicrema*, *R. decolorans*, *R. rhytipes*, and some others seem to depend almost for their strongest features on the colour or discoloration of the flesh. This is the most redeeming feature in *R. Du Portii*. It seems to be characteristic of *R. Barlaæ*, and also

of a species as yet undescribed, but which we call provisionally *R. ochroviridis*. Whether it takes a positive and definite form in *R. resca* is not yet determined. It is not so liable to mutation, according to a wet or dry season, as taste or odour, and hence, all things considered, is more reliable.

The colour of the flesh under the cuticle appears to have the confidence of some mycologists who have little or no faith in the external coloration of *Agaricini* at all. This seems rather anomalous, but it may be true. It is generally considered a good test of *R. emetica*, *R. consobrina*, *R. cyanoxantha*, and perhaps to a certain extent of *R. furcata*, as well as *R. cutefracta*. This subcuticular colour is not always the same as that of the cuticle, and then perhaps even more to be trusted, as in *R. cutefracta*, *R. furcata*, and *R. rhytipes*.

Considerable emphasis is often placed upon a separable or adnate cuticle, but we doubt much if this is not relative rather than absolute, and very much fluctuates with a wet or dry season. True, the cuticle may always be raised with much greater facility in some species than in others, and always most freely at the margin. Here is a little work still left for the microscope to determine whether there is in all cases a distinct outer layer of cuticular cells, or whether they are represented in the adnate pellicle by a cell structure continuous with the subcuticular cells. If the distinct cuticular cells are in all cases a superimposed layer, parting away with more or less facility, then the reliance to be placed upon a separable pellicle must be very small, fluctuating according to external circumstances.

Relative again, and not absolute, must be regarded the viscosity of the pellicle. Granted that in some instances it is most decided under any, and almost every, condition of humidity, as we presume it must be in *Russula cruentata*, Quel., where it is said to resemble *Hygrophorus limacinus*, but this is an extreme case. In damp situations, and persistently wet weather, it can be imagined that the cuticle of the species in the section *Rigidæ* will any of them exhibit fragments of grass and leaves adhering to them with some tenacity, as if they had experienced their soft moments. A distinguished and esteemed Woolhopeian not infrequently has been known to experiment on the conversion of a dry cuticle to a viscid one, by damping and pressing fragments of grass thereon, as a trap to catch the unwary. Nevertheless, for all this, the section *Rigidæ* is a good one, and, comparatively, the cuticle is dry, but not absolutely so, especially when young, that persistently damp weather has no influence upon them. Even that most characteristic, and characteristically dry, species *Russula virescens* may be gathered with fragments of grass closely agglutinated to the pileus, and yet the wood nymphs carry no fairy gum pot, for the delusion of corporeal fungus hunters.

Apropos of the cuticle, a curious phenomenon may be observed in two or three species—and we have observed it only in two or

three—in which the cuticle of the pileus is continued for some distance from the margin along the edge of the gills in a coloured line. This may often be seen in *Russula lepida*, especially when the cuticle remains red or pink. This fact is alluded to by Fries ("Mon.," p. 191), where he says:—"Acie vero, præcipue marginem versus, sæpe rubræ ob marginem pilei cum lamellis contiguum, ut etiam in sequente"—that is in *Russula rubra*. Not only in these two species, but also in another, which we have called *R. granulosa*, an ochraceous species, the darker line is continuous from the margin of the pileus along the edge of the gills, for a considerable distance, like a coloured edge. As a sort of collateral evidence this fact may sometimes be useful in determination.

The final reference we have to make to the cuticle is to remind you that the tomentose cuticle is a rarity almost unknown in *Russula*. We have the viscid and comparatively dry cuticle, opaque or shining, bright or dull, but not the really tomentose pileus. There is a near approach to it in *R. punctata*, Gillet, at times, but a kind of pulverulence is the closest approach we commonly obtain to a tomentose cuticle. *Russula amœna*, Quelet, is affirmed to have a pulverulent pileus; and so pulverulent is that of *R. mariae*, Peck, a North American species, that the red powder comes off on paper, or may be washed into water, to which latter it gives a pink tinge. On the other hand we have a variation from the absolutely smooth pileus, in those species in which the cuticle breaks up into small areolæ, or even into minute adherent granules. The best examples are those of *R. virescens*, *R. cutescens*, *R. xerampelina*, *R. punctata*, and *R. granulosa*. It may be added that we regard this character as a very strong and useful one, and, for aught we know or believe, constant.

This brings our "Notes and Queries" almost to a close. Any comparison of species, or critical observations on the limits of species, or the direction of their variability, must be postponed to some period when figures of all the British species can be turned to in illustration. As this time is, we hope, not many months distant, the subject may soon be resumed. It will be well worthy of the labour if we can succeed in rendering the *Russulæ* more intelligible, and this we shall still endeavour to accomplish. The number of available characters is greatly reduced in this genus, and we are compelled to fall back on minute distinctions which are little regarded in other groups, but by making good use of our eyes, it may be possible to initiate an improvement.

Our final note must relate to the general classification of the genus. Admitting something like 100 species into the fraternity, it is evident that an order of grouping must be adopted for facility of reference and determination. Fries attempted this by the recognition of five tribes, and no one has yet ventured to supersede them. Take them for all in all, we do not think, with our present knowledge, that any better can be offered; at any rate, no better arrangement has been proposed. The *Compactæ* is the first, and

at the same time the most perfect of the five groups or tribes. This requires no comment. The second, or *Furcatæ*, seems at certain points to melt into the fourth, or *Heterophyllæ*. It requires considerable care sometimes to put them in practice. The third, or *Rigidæ*, should be, and we think is, a natural and satisfactory tribe, although not a large one. Whilst the last, or *Fragiles*, if strictly maintained within the limits of the diagnosis, is a good workable tribe, although we fail to see a good reason for two groups of the yellow-spored forms when one group would answer the purpose. The same division of yellow-spored from white-spored species would be advisable in all the other tribes. A further subdivision of each section, according to some prominent feature, so as to reduce the size of each final group to some six or ten species, would probably be the most complete classification, and the most workable one that could be proposed. This is the only direction in which we imagine that any reform in the classification could be taken.

Some there are who have been rash enough to suggest the amalgamation of *Lactarius* and *Russula* in one large genus. These enthusiasts could hardly be practical men, or they would know that in proportion as you *diminish*, and not *increase* the size of the genus—all other conditions being equal—so do you facilitate its comprehension, and render it more practically applicable.—*Requiescat in pace.*

NEW BRITISH FUNGI.

By M. C. COOKE.

(Continued from p. 3.)

Agaricus (Omphalia) chrysophyllus, *Fr. Hym. Eur.* 156.

Pileus submembranaceous, umbilicate, flaccid, flocculose, dusky yellow, when dry hoary tan-colour, margin reflexed, stem hollow, equal, smooth, yellow, gills very decurrent, distant, bright golden egg-colour.—*Fr. Icon. t.* 74, *f.* 1.

On wood. Rothiemurchas (Rev. Dr. Keith).

Pileus about $1\frac{1}{2}$ in. diam.

Agaricus (Naucoria) subglobosus, *Alb. & Schw. Sacc. Syll.* 3406.

Pileus rather fleshy, hemispherical, even, rather viscid, yellowish (about 2 cm. broad), stem thin, becoming hollow, equal, short ($1\frac{1}{2}$ in. long), longitudinally striate; gills very broad, nearly free, rhomboidal, convex, ochraceous flesh-colour. Spores spheroidal ($9 \times 7 \mu$), pale salmon-colour.

On the ground. Woodman's Glade, Epping.

This seems to be the true species of *Alb. & Schw.*, but the spores can scarcely belong to *Dermini*, but rather to *Hyporrhodii*. North American specimens determined by Berkeley (when dried)

have ferruginous gills and spores, and must belong to a different species. It would be better to retain this as *A. (Nolanea) subglobosus*, Alb. & Schw., accepting the North American species as *A. (Naucoria) subglobosus*, Berk. Fries had never seen Alb. & Schw. species.

Agaricus (Hypholoma) felinus, Pass. *F. Parm. (nec. Pers.)*.

Pileus fleshy-membranaceous, hemispherical then expanded, smooth, hygrophanous; stem fistulose, short, thin, *rather shining*, white, *incrassated at the base*, and white floccose, striate at the apex; gills adnate, white, then fuscous. *A. catarius*—*Fr. Hym. Eur.* p. 296.

On the ground amongst grass. Kew Gardens, and Forest of Dean.

Gregarious, subcaespitose, ochraceous, pileus scarcely 1 in. diam. Stem about $1\frac{1}{2}$ in. long; spores $6 \times 3 \mu$.

Lactarius aspidius, *Fr. Hym. Eur.* 424.

Pileus fleshy, convex *gibbous*, then depressed, viscid, without zones, straw colour, girt with a distinct deciduous *tomentose white marginal band*, afterwards quite smooth; gills rather thick, pallid; milk white, *then lilac*.

In swampy places. Harewood, near Leeds (G. M.).

Pileus 2-4 in. diam. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores subglobose, 8-10 μ .

Lactarius utilis, *Weinm. Russ. p.* 43.

Pileus convexo-plane, at length funnel shaped, even, smooth, tan colour; stem hollow, even, of the same colour; gills adnate, crowded, pallid; milk white, mild, then slightly acid.—*Fr. Hym. Eur.* 425.

On the ground. Warwickshire (J. E. B.).

Pileus 5-8 in. diam. Stem 2-3 in. long, 1 in. thick. Gills 4-5 lines broad. Spores 8-10 μ , almost smooth.

In the specimen found for the first time in Britain the pileus was pale, and rather a dirty ochre, the stem darker, and longitudinally striate, but otherwise in accord with the description.

Lactarius (Russularia) aurantiacus, *Fl. Dan. t.* 1909.

Pileus fleshy, plane, then depressed, even (1-2 in. diam.), without zones, *orange*. Stem stuffed (3 in. long, $\frac{1}{2}$ in. thick), smooth, same colour as the pileus; *gills decurrent*, crowded, from yellowish to ochraceous. Milk white, slowly acid. Flesh pallid.

On the ground. Fairmead, Epping Forest.

Resembling *L. mitissimis* in colour, but rather brighter and more orange, besides being acid.

Russula (Rigidæ) atropurpureus, *Krombh. t.* 64, *f.* 5-6.

Large, fleshy, plane, then depressed, dark purple, shining, dry or rather viscid in wet weather, margin quite entire, even; stem straight, solid, stuffed, white, somewhat cylindrical; gills fleshy, often furcate, broad, white, entire. Flesh white, firm, taste mild.

Amongst grass. Epping Forest, and near Hereford.

Referred by Fries to *Russula emetica*, but the persistently mild taste and other points separate it from that species. Pileus 3-4 in. diam., with the appearance of our usual form of *R. rubra*, with which it is easily confounded. It is somewhat doubtful whether it can be regarded as other than a mild variety of that species.

***Russula (Furcatae) ochroviridis*, Cooke.**

Pileus fleshy, flattened then depressed (4 in. or more), at first viscid, polished when dry, with a thin adnate pellicle, ochraceous towards the margin, disc olivaceous or fuliginous; margin spreading, even, acute; stem short, thick, 2 in. long, 1 in. thick, reticulately rugulose, white, rarely growing pallid, flesh fuliginous when cut, stuffed, spongy within; gills attenuated both ways, lanceolate (6 mm. broad in the centre), crowded, many furcate, white, becoming a little dirty white when old. Spores white, subglobose ($9 \times 7 \mu$), faintly granular. Taste mild.

On the ground. Kew, Arboretum, July, 1888.

Resembles *R. ochroleuca* in the rugose stem, but differs in not becoming cinereous, in the dark, dingy olive centre of the pileus, narrow gills, discoloration of the flesh, and the mild taste. In habit it resembles *R. furcata*, but differs in the paler greenish ochre pileus, narrower gills, rugose stem, and discoloured flesh. Differs from *R. æruginea* in the margin not being striate, in the stem being short and not smooth, and in the gills being crowded.

***Russula (Furcatae) maculata*, Quel. Soc. Bot. Fr., 1877, t. 5, f. 8. Sacc. Syll. 1804.**

Pileus solid, convex, then plane, viscid, reddish flesh-colour, then pallid, then decoloured, spotted with purple or brown, margin undulate, and often darker (3 in. diam.), flesh white, peppery, reminding one of the odour of rose; stem short, solid, reticulated striate, white or somewhat rosy, then spotted with ochre. Gills attenuate behind, adnate, bifurcate, pallid sulphur, then somewhat peach-colour. Spores 10μ diam.

In woods. Epping Forest.

Somewhat like *R. depallens*, but peppery, and without a grey stem, but with yellow gills.

***Russula (Fragiles) granulosa*, Cooke.**

Acrid. Pileus convex, plane, then depressed or infundibuliform (2-3 in. diam.), at first viscid, ochraceous yellow, disc darker, breaking up into minute granules, margin even or faintly striate when old. Stem 2-3 in. long, $\frac{1}{2}$ -1 in. thick, minutely granular or mealy throughout, granules snow-white at the apex, fuscous below, internally white, spongy; gills rather crowded, somewhat attenuated behind, nearly free, equal, rarely furcate, white; spores rough, subglobose, 12μ diam., apiculate, white.

On the ground, under trees. Arboretum, Kew.

Habit nearly that of *R. ochroleuca*, which it also resembles in colour, but differing in the darker and minutely granular disc as well as the mealy stem, which is not at all grey; the cuticle of the pileus is continuous at the margin for some distance along the edge

of the gills. Altogether distinct from all the ochraceous species, in many points agreeing with the section *Rigida*, but decidedly viscid when moist, possibly only a variety of *R. ochroleuca*.

Russula (Fragiles) puellaris, *Fr. Hym. Eur.* 452.

Pileus, except the disc, *membranaceous*, conically convex, then flattened or depressed, striate to the margin and tuberculose ($1\frac{1}{2}$ in. diam.), livid purplish, becoming yellowish, *disc brown*, always darker, stem soon hollow ($1\frac{1}{2}$ in. long), white, becoming yellowish; gills attenuated behind, adnate, thin, crowded, *naked*, white, then pallid yellow.

On waysides, in woods, etc. Morpeth (C. H. Sp. Perceval, Esq.).

var. **intensior**. Pileus darker, nearly the same size, deep purple, nearly black at the disc, stem and gills as above.

In the same places.

The stem has a tendency to become thickened at the base, and turns yellowish where touched.

Russula (Fragiles) roseipes, *Secc. Myc. No.* 483.

Pileus fleshy, margin thin, convex, then flattened and depressed, viscid, soon dry, rosy flesh colour, rosy orange, or rosy with a tinge of ochre, at first spotted with whitish, at length blanched, margin shortly tuberculate, striate (2-3 in. diam.), gills rather crowded, equal, some dimidiate or furcate, furcate behind and rounded, free, rather distant, sometimes with an adnate tooth, ventricose, whitish, then ochraceous egg-yellow, connected by veins; stem stuffed, lacunose, white, here and there sprinkled with a rosy meal (2 in. long, 8-15 mm. thick), flesh whitish, then rather yellowish, taste and odour pleasant, spores globose, echinulate, ochraceous, 8-10 μ .

In woods. Morpeth (C. H. S. Perceval, Esq.).

Russula (Fragiles) pulchralis, *Britz. Sudb. Russ. f.* 13.

Pileus viscid, thin, convex, then flattened and depressed (2 in. diam.), circumference ochraceous, centre spotted with red or purple, margin thin, deeply striate and often split. Stem equal, ventricose, or thickened at the base, fragile, white; gills broad, distant, rather thick, whitish, then ochraceous yellow. Spores nearly globose, $9 \times 8 \mu$.

In woods. Near Bristol (C. Bucknall).

It is dangerous to attempt an identification of Britzelmayer's species from his imperfect descriptions and crude figures, but in this instance it appears to be correct, although Saccardo places this species (No. 1,813) in the section *Rigida*, whereas it evidently belongs to *Fragiles*, according to the evidence afforded by the figure and description, near to *R. nitida*.

Scolecotrichum uniseptatum (*B. & C.*) = *Cladotrichum*, *Sacc. Syll. No.* 1,797.

Threads dark brown, thin, simple, or rarely shortly branched, not swollen at the joints, septate; conidia oblong, uniseptate, slightly constricted, rounded at the ends, brown, $10 \times 5 \mu$.

On dead wood. Epping Forest.

Macrosporium Camelliæ, C. & Mass.

Epiphyllous. Spots orbicular or confluent, pallid, with a broad brown margin (1 cm. or more diam.), threads tufted, septate (30-40 μ long), simple, pale olive. Conidia clavate, three septate, then multiseptate and muriform (50-60 \times 15-25 μ), attenuated below into a slender pedicel, 30-50 μ long, pale olive.

On living leaves of *Camellia japonica*. Kew.

Tubercularia subpedicellata, Schw. Sacc. Syll. 3,038.

On *Syringa vulgaris*. Kew.

Spores 6-7 \times 3-4 μ .

Phoma brunneotincta, B. & C., Sacc. Syll. 903.

Perithecia semi-immersed, gregarious on brownish or blackish spots, papillate, $\frac{1}{2}$ -1 mm. diam., somewhat shining. Sporules straight or curved, hyaline, more or less rounded at the ends, sometimes nucleolate, 14-16 \times 3-4 μ , on rather stout sporophores, 35-40 μ long.

Inside husks of *Æsculus*. Kew.

NEW EXOTIC FUNGI.

By M. C. COOKE.

(Continued from p. 16.)

Dialonectria (Nectriella) gigaspora, Cke. & Mass.

Gregaria vel sparsa. Peritheciis minutis, aurantiis, pyriformibus vel ellipticis, glabris; ostiolo conico. Ascis lanceolatis, 150 μ long, octosporis. Sporidiis elliptico-lanceolatis, continuis, granulosis, hyalinis, 30-33 \times 10 μ .

On *Botryosphaeria inflata*. Habgalla, Ceylon (542).

Botryosphaeria inflata, Cke. & Mass.

Peritheciis cortice interiore nidulantibus, demum rimoso-erumpentibus, papillatis, glabris, atris, contextu coriaceo; rimis arcte conniventibus, graphideis, flexuosis; ascis clavatis, octosporis. Sporidiis biserialibus, ellipticis, utrinque obtusis, medio inflatis, continuis, hyalinis, 33-35 \times 10 μ .

On bark. Habgalla, Ceylon (542).

Dothidea (Coccocdea) globulosa, Cke. & Mass.

Hypo-epiphylla, globosa, rugulosa, atra, opaca (1-1 $\frac{1}{2}$ mm. diam.), loculis periphericis, globosis, minimis; ostiolis obsoletis; ascis clavatis, octosporis, sporidiis inordinatis, oblongis, triseptatis, hyalinis, 25 \times 7 μ .

On leaves of *Tasmania aromatica*. Tasmania.

Externally resembling *D. coccodes*, Lev., but different in fruit; analogous to *Bagnisiella*, with triseptate sporidia. According to authentic specimen Leveille's species is a *Dothidea*, with globose stroma, and peripheral cavities, or pseudo-perithecia, and by no means a species of *Physalospora* (Sacc. Syll. No. 1717).

Trabutia eucalypti, *Cke. & Mass.*

Epiphylla; stroma coriacea, suborbicularis (3 mm. diam.), convexo-rugulosa, atra, nitida, peritheciis in stromate innatis protuberantibus, ostiolo minuto pertusis. Asci cylindrico-clavatis. Sporidiis elliptico-lanceolatis, continuis, hyalinis, $30 \times 8-9 \mu$.

On leaves of *Eucalyptus viminalis*, β *mannifera*. Tasmania.

Clypeolum zeylanicum, *Cke & Mass.*

Peritheciis sparsis, superficialibus, dimidiato-seutatis, atris, nitidis ($\frac{1}{4}$ mm. diam.), macula nulla, vel macula brunnea indeterminata insidentibus. Asci clavatis. Sporidiis ellipticis, uniseptatis, hyalinis, $11 \times 3 \mu$.

On coriaceous leaves. Ceylon.

Micropeltis depressa, *Cke & Mass.*

Epiphylla. Perithecio dimidiato, depresso, orbiculari, atro, opaco, centro poro pertuso, ambitu plano (circa $\frac{1}{2}$ mm. diam.). Asci clavatis, substipitatis. Sporidiis lanceolatis, triseptatis, hyalinis, $35-38 \times 8-9 \mu$.

On leaves of *Cola acuminata*. Fernando Po.

Microcera pluriseptata, *Cke. & Mass.*

Exigua, sparsa, pulvinata, aurantia, sessilis, conidiis bacillaribus, utrinque conico-attenuatis, rectis, vel leniter curvulis, ad 11-septatis, hyalinis, $100-120 \times 10 \mu$. Sporophoris filiformibus, ramosis.

On *Calocera glossoides* and on bark. Cordova, Mexico (Salle).

Chaetomella furcata, *Cke. & Mass.*

Peritheciis superficialibus, sparsis, subglobosis, astomis, nigris, undique setosis, pilis erectis, sursum bi-vel tri-dichotomis, fuscis; sporulis ovatis, vel subamygdaloideis, pallide fuscis, $10-11 \times 8 \mu$.

On coriaceous leaves. Sikkim.

BRITISH DISCOMYCETES.

Notes and Additions, No. 1.

By WILLIAM PHILLIPS, F.L.S.

I purpose in this and other contributions to these pages to deal with several species which were not included in the "Manual of British Discomycetes," either from oversight or from some doubt remaining on my mind as to the correct determination of specimens sent to me by correspondents. The evil of species making is one to be anxiously avoided; on the other hand it only adds to confusion when a plant is wrongly-referred to an already described species, and this is sometimes done when an immediate determination is called for. I shall seek the opportunity here of revising such work, as well as recording the occurrence of new species. The awakened interest in this group of fungi will bring to light many plants described by the older authors hitherto overlooked, and while confirming the words of the illustrious Fries that

"England has more numerous and remarkable Discomycetes than Sweden," will place this country on a par with most others in Europe.

Not the least difficult task of those who essay to determine species is that of deciding what their predecessors have done. The scattered sources of information, the scanty specimens in public herbaria, the inadequacy of descriptions—sufficient when the number of species were limited—and the absence of microscopic details, render it next to impossible to be quite sure what plants a given author had before him. To carefully weigh the evidence, and scrupulously compare details, are the only methods of avoiding the needless multiplication of species.

***Peziza leucomelas*, Pers.**

Solitary; cup white, stipitate; stem rather thick, interruptedly sulcate; hymenium cinereous approaching black; asci cylindrical; sporidia 8, broadly elliptic, 1-guttulate, smooth, $20 \times 13 \mu$; paraphysis filiform, clavate at the apices.

Peziza leucomela, Pers. Myc. Eur., p. 219; *Peziza mucropus*, Sturm Fl. (in part), No. 31, t. 20, f. d.; *Peziza sulcata*, Fekl. Symb., p. 330.

Exs. Fekl. Fung. Rh., No. 2,085.

On rocky clay bank. Feby.

The cups are 1 to $1\frac{1}{2}$ inches broad, and the same high. It may easily be confounded with *P. acetabulum*, Linn., if regard be not had to the cinereous disc.

Ashton Court, Clifton. Mr. Cedric Bucknall.

***Peziza ancilis*, Pers.**

Substipitate, from the fleshy base of the cup being protracted downwards, fragile; externally white, thick branching veins below; hymenium at first concave, becoming nearly plane, and wrinkled, greyish brown or purplish brown; asci cylindrical, narrowed below; sporidia 8, broadly fusiform, with an apiculus at each end, 3-guttulate, brownish, $25-29 \times 10-12 \mu$; paraphyses stout, a little enlarged at the brownish summits, indistinctly septate.

Peziza ancilis, Pers. Myc. Eur. 219; Fries Sys. Myc., ii., 42; Cooke Mycog., 371, neither 229 nor 372 Rehm.; *Peziza venosa*, Weberb. Pilz., t. ii., fig. 1.

On wet soil where fir-wood had stood. May, 1888.

Cups 2 to 3 inches broad, 1 to $1\frac{1}{2}$ inch high. Our specimens were 1 to $1\frac{1}{4}$ inches broad, and $\frac{3}{8}$ of an inch high. The remarkable sporidia distinguish this from its British allies.

I am indebted to Prof. James W. H. Trail for specimens of this most interesting species.

Dyce, near Aberdeen, N.B.

***Peziza umbrina*, Boud.**

Cæspitose, sessile, large, at first hemispherical then expanded, margin persistently incurved, externally pruinose or granulose,

pale brown; hymenium umber-brown; asci cylindrical, narrowed near the base; sporidia 8, elliptic, asperate, hyaline ($18-20 \times 9 \mu$, Cooke), $13-15 \times 7 \mu$; paraphyses filiform, a little enlarged at the summits.

Peziza umbrina, Boud. (not Persoon), in Cooke's Myco., fig. 378.

On charred wood. Sept.

Cups 2 to 3 inches broad. The exterior in the specimens from Scotland were granulose rather than pruinose, and the sporidia were somewhat smaller than Dr. Cooke's measurements, but I have no doubt it is Boudier's species.

Aviemore, N.B. Rev. Dr. Keith. Sept., 1888.

Hymenoscypha uliginosa, Fries.

Scattered or gregarious, stipitate or sessile, watery, waxy, firm; cup somewhat concave, or slightly convex, pallid white, or from yellow to ochrey, when dry dark testaceous, or sub-ferruginous, frequently flexuous and umbilicate; stem becoming livid-pallid, or pallid, hollow; asci cylindraceo-clavate; sporidia 8, oblong-elliptic, often provided with two minute apical guttula, $7-14 \times 3-4 \mu$; paraphyses filiform, stout, slightly enlarged above.

Peziza uliginosa, Fr. Sys. Myc., ii., p. 138; Karst. *Pez.* & *Ascob.*, p. 35, and *Monogr. Pez.*, p. 149; Nyl. *Obs.*, p. 48; *Helotium uliginosum*, Karst. *Myco. Fenn.*, p. 121.

Exs. Karst. *Fung. Fenn.*, 639.

On branches of willow (*Betulus*) in damp places. Nov.

The cups 1 to 2 lines broad, stem half a line to 4 lines high. Mr. Grove's specimens were not so large as Karsten's, from whom the above description is mainly copied. Asci $65-90 \times 6-8 \mu$.

Olton. Mr. W. B. Grove.

Mollisia (Pseudopeziza) Alismatis, Phil & Trail, *Grevillea*, xvi. p. 93.

It is probable that this is the same plant as *Peziza Alismatis*, Pers. *Myco. Eur.*, p. 301 = *Patellaria Alismatis*, Fr. Sys. Myc., ii., p. 161; but of this I am uncertain. In any case it is more properly placed in the sub-genus *Pseudopeziza* of *Mollisia*.

Lachnea umbrata, Fr. var. *pallida*, Rehm.

This differs in colour from the type, being pale tan colour.

Humaria umbrata (Fr.), var. *pallida*, Rehm. *Asco.*, No. 456; Conf. Cooke in *Grevillea*, vii., p. 57.

On the earth in damp places. May.

Terrington, St. Clement's, Norfolk. Mr. G. Herbert Ward.

Dermatea Pseudoplatani, n. s.

Cæspitose, erumpent, sessile or substipitate; hymenium at first convex, then a little depressed, hoary-white, becoming at times pale yellowish brown; asci broadly clavate; sporidia 8, biserial,

oblong, or oblong-elliptic, with 3 guttulæ, at length 3-septate, $15-17 \times 5-7 \mu$; paraphyses clavate at the summits.

On bark of *Acer Pseudoplatanus*. October.

The cups are $\frac{1}{4}$ to $\frac{1}{2}$ a line broad, rarely single, erumpent, and remarkable from their hoary-whiteness. Nearer *D. livida* (B. & Br.) than any other species. It is not *Nodularia acericola* (Peck.), which is also a *Dermateu*, and which has much larger sporidia.

I am indebted to Mr. W. B. Grove, of Birmingham, for this interesting species.

Spark Hill. W. B. Grove, No. 505.

Patellaria Crataegi, n. s.

Solitary or caespitose, erumpent, hemispherical, then patellate, the prominent margin and exterior brownish-black, whitish within; hymenium black; asci cylindrical, narrowed at the base; sporidia 8, large, narrowly clavate, often ventricose in the centre, faintly coloured, having numerous guttulæ, $30-60 \times 5-6$ in the broadest part; paraphyses adherent, filiform, clavate, brown, and septate at the apices.

On twigs of *Crataegus*. Jany.

Cups $\frac{1}{4}$ to $\frac{1}{2}$ a line broad; asci $140-160 \times 10$. The cups break through the bark singly or in caespitose clusters of three to five, suggesting *Tympanis*. It is near *Patelluria bacilligera*, Karst.

Corbie Den, Scotland. Professor James W. H. Trail.

Phacidium clematidis, n. s.

Scattered or gregarious, erumpent, orbicular, minute, splitting the epidermis into unequal laciniae; hymenium pallid-brown; asci clavate or clavate-fusiform; sporidia 8, linear-acute, 5-6 guttulate, straight, $35 \times 4 \mu$; paraphyses slenderly filiform.

On dead branches of *Clematis*. Autumn.

The cups are $\frac{1}{8}$ to $\frac{1}{4}$ of a line broad; asci $55-56 \times 10$. The margin is cut into short, unequal laciniae, or sometimes only coarsely serrated.

Carlisle. Dr. Carlyle.

Ascomyces aureus (Pers.).

Forming in the living leaves concave depressions which are lined with the golden yellow hymenium; asci oblong-clavate, without stem-cells; sporidia innumerable, very minute, elliptic, $4-6 \times 2\frac{3}{4}-3\frac{1}{2} \mu$.

Erineum aureum, Pers. Syn., p. 700; *E. populinum*, Schum Enum., ii, p. 446; *Taphrina aurea*, Fr. Obs., i, p. 217; Robin. Ann. Bot., vi, p. 174; *Exouscus Populi*, Thumen. Hedwig, 1874, p. 98; *Exouscus aureus*, Sacc. Rabh. Krypt. Flora., vi, p. 3; *Ascomyces aureus*, Sacc. Mich., i, p. 62 and p. 516; Fung. Ital., fig. 1281; Karst. Act. Soc. F. & F. Fenn., ii, No. 6.

Exs. Kunz. Fung. Sel., 169 and 275; Rabh. Fung. Europ., 2350; Rehm. Asco., 273; Thumen Myco. Univ., 80 and 1461; Sacc. Myco. Ven., 1500.

On both sides of the leaves of *Populus nigra*. August.

Depressions 2-7 lines broad. Asci 92-105 \times 16-25 μ . Size of sporidia, given above, is after Saccardo.

Near Aberdeen. Professor James W. H. Trail.

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A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

SYNOPSIS PYRENOMYCETUM.

(Continued from p. 28.)

Fam. 12. CERATOSTOMEÆ. Perithecia plerumque immersa,
vel quandoque subsupercialia, rostrata.

GEN. 1. CERATOSTOMELLA. Perithecia subcarbonacea.
Sporidia hyalina.

* **CAMPTOSPHERIA.** *Sporidia pyriformia.*

3747. sulphurea, *Fckl.* ... 1566

** **ROSTRATELLA.** *Sporidia subovoidea.*

- | | |
|--|--|
| 3748. rostrata, <i>Fr.</i> ... 1546 | 3758. dispersa, <i>Karst.</i> ... 1557 |
| 3749. cirrhosa, <i>P.</i> ... 1547 | 3759. subpilosa, <i>Fckl.</i> ... 1558 |
| 3750. microcarpa, <i>Karst.</i> 6362 | 3760. multirostrata, <i>Fckl.</i> 1559 |
| 3751. leiocarpa, <i>S.</i> ... 1548 | 3761. subsalsa, <i>Cr.</i> ... 1560 |
| 3752. ampullasca, <i>Cke.</i> ... 1549 | 3762. sphærosperma, <i>Fckl.</i> 1561 |
| 3753. vestita, <i>S.</i> ... 1550 | 3763. <i>Stevensoni</i> , <i>B. & Br.</i> 1562 |
| 3754. De Baryana, <i>Auers.</i> 1551 | 3764. canulata, <i>Pr.</i> ... 1563 |
| 3755. dubia, <i>S.</i> ... 1553 | 3765. leptorrhyncha, <i>Mont.</i> 1565 |
| 3756. stricta, <i>Pers.</i> ... 1555 | 3766. hystericina, <i>Cke., Grev.</i> |
| <i>var. majuscula, S.</i> | <i>xi., 109</i> |
| 3757. trichina, <i>Moug.</i> ... 1556 | |

** **LENTOMITA.** *Sporidia didyma.*

- | | |
|--|--|
| 3767. longicollis, <i>Karst.</i> 6518 | 3771. Schulzeri, <i>Pir.</i> ... 2284 |
| 3768. brevicollis, <i>Nssl.</i> ... 2281 | 3772. ligneola, <i>B. & Br.</i> 2285 |
| 3769. cæspitosa, <i>Nssl.</i> ... 2282 | 3773. stylophora, <i>B. & Br.</i> 2286 |
| 3770. crassicollis, <i>Not.</i> ... 2283 | 3774. Auerswaldii, <i>Fleis.</i> 2287 |

** **CERATOSPHERIA.** *Sporidia pluriseptata.*

- | | |
|--|--|
| 3775. lampadophora, <i>B. & Br.</i> ... 3681 | 3779. fuscella, <i>Karst.</i> ... 3685 |
| 3776. crinigera, <i>Cke.</i> ... 3682 | 3780. cinerea, <i>Quelet</i> ... 3686 |
| 3777. pusilla, <i>Fckl.</i> ... 3683 | 3781. rhenana, <i>Auers.</i> ... 1552 |
| 3778. rostrata, <i>Kickx.</i> ... 3684 | 3782. subrostrata, <i>Karst. Exs.,</i> |
| | 859 |

*** OPHIOCERAS. *Sporidia filiformia, septata.*

- | | | |
|--|---|------|
| 3783. dolichostoma, <i>B. & C.</i> ... | 3786. bacillata, <i>Cke.</i> ... | 4111 |
| 3784. Friesii, <i>Mont.</i> ... | 3787. macrocarpa, <i>Sacc.</i> ... | 4110 |
| 3785. hystrix, <i>Ces.</i> ... | 3788. longispora, <i>Ell.</i> ... | 4112 |
| | 3789. Therryana, <i>S. & P.</i> ... | 4113 |

*** RHAMPHORIA. *Sporidia muriformia.*

3790. delicatula, *Nsl.* ... 3933.

GEN. 2. **CERATOSTOMA**, *Fr.* Perithecia subcarbonacea. *Sporidia colorata.*

* EU-CERATOSTOMA. *Sporidia continua.*

- | | | | |
|---|-----|--|------|
| 3791. Notarisii, <i>Sacc.</i> ... | 771 | 3801. melanosporoides, <i>Wint.</i> ... | 6297 |
| 3792. querceticolum, <i>Cr.</i> ... | 772 | 3802. Therryanum, <i>R. & S.</i> ... | 782 |
| 3793. caminatum, <i>C. & E.</i> ... | 773 | 3803. culmicolum, <i>Sacc.</i> ... | 783 |
| 3794. avocetta, <i>C. & E.</i> ... | 774 | 3804. vitis, <i>Fckl.</i> ... | 784 |
| 3795. brevirostre, <i>Fr.</i> ... | 775 | 3805. barbirostris, <i>Duf.</i> ... | 1554 |
| 3796. australe, <i>Op.</i> ... | 776 | 3806. nyssæcola, <i>B. & C.</i> ... | 1564 |
| 3797. rubefaciens, <i>Pk.</i> ... | 777 | 3807. carpophilum, <i>Ell.</i> ... | 5914 |
| 3798. jani-collinum, <i>S. & S.</i> ... | 778 | 3808. subulatum, <i>Ell.</i> ... | 5915 |
| 3799. graphioides, <i>S.</i> ... | 779 | 3809. penicillus, <i>Quelet</i> ... | 5916 |
| 3800. caulincolum, <i>Fckl.</i> ... | 780 | 3810. ?foliicolum, <i>Fckl.</i> ... | 6298 |

** *Species incertæ.*

- | | | | |
|--|-----|---------------------------------------|------|
| 3811. fallax, <i>Cke. & S.</i> ... | 785 | 3815. hæmatorhynchum, <i>Sow.</i> ... | 789 |
| 3812. piliferum, <i>Fr.</i> ... | 786 | 3816. cuspidatum, <i>Fr.</i> ... | 790 |
| = <i>dryina</i> , <i>Pers.</i> ... | | 3817. stilbum, <i>Schum.</i> ... | 791 |
| 3813. procinnibens, <i>Fckl.</i> ... | 787 | 3818. spina, <i>Schw.</i> ... | 792 |
| 3814. mucronatum, <i>S.</i> ... | 788 | 3819. drupivora, <i>Schweiz.</i> ... | 4342 |

** MICROASCUS. *Sporidia continua muco involuta.*

3820. longirostris, *Zuk.* ... 6299.

** RHYNOCOSTOMA. *Sporidia didyma.*

- | | | | |
|---|------|--|------|
| 3821. cornigera, <i>Karst.</i> ... | 2764 | 3826. altipeta, <i>Peck.</i> ... | 2769 |
| 3822. minuta, <i>Karst.</i> ... | 2765 | 3827. badia, <i>Fr.</i> ... | 2770 |
| 3823. exasperans, <i>Karst.</i> ... | 2766 | 3828. conica, <i>Lev.</i> ... | 2716 |
| 3824. Julii, <i>Fab.</i> ... | 2767 | 3829. tinctum, <i>Ell. & Ev.</i> ... | 6620 |
| 3825. pachyceras, <i>D. R. & M.</i> ... | 2768 | 3830. Beccarianum, <i>Pass.</i> ... | 7474 |

*** RHYNCO SPHERIA. *Sporidia triseptata.*

3831. acuta, *Sacc.* ... 3276 3834. Cesatiana, *Sacc.* ... 3279
 3832. ceratophora, *S. & S.* 3277 = *Beccariana*, *Ces.*
 3833. longicollis, *Sacc.* ... 3278

*** CERATOSPHERIA. *Sporidia pleuriseptata.*

3835. æruginosa, *Rehm.* 3688 3837. mycophila, *Wint.* 7057
 3836. Sarawacensis, *Ces.* 3689 3838. irpex, *B. & Br.* ... 3384

GEN. 3. **GNOMONIA.** Perithecia submembranacea, subcutaneo erumpentia; ostiolo rostellata; sporidia hyalina.

* GNOMONIELLA. *Sporidia continua.*

3839. tubiformis, *Tode* ... 1567 3851. rosæ, *Fckl.* ... 1579
 3840. amæna, *Nees* ... 1568 3852. pruni, *Fckl.* ... 1580
 var. petiolorum, Schw. 3853. perfidiosa, *Karst.* ... 1581
 3841. avellanae, *Sch.* ... 1569 3854. angelica, *Fckl.* ... 1582
 3842. spilota, *Lev.* ... 1570 3855. devexa, *Desm.* ... 1583
 3843. emarginata, *Fckl.* 1571 3856. curvicolla, *Peck.* ... 1584
 3844. mirabilis, *Peck.* ... 1572 3857. excentrica, *Cke. &*
 Pk. ... 1585
 3845. nervisequia, *Wall.* 1573 3858. amygdalina, *Fckl.* 1586
 3846. fasciculata, *Fckl.* ... 1574 3859. euphorbiæ, *Fckl.* ... 1587
 3847. lugubris, *Karst.* ... 1575 3860. idæicola, *Karst.* ... 1588
 3848. comari, *Karst.* ... 1576 3861. vagans, *Johan.* ... 6363
 3849. circinata, *Fckl.* ... 1577
 3850. vulgaris, *Ces.* ... 1578

** MAMIANA. *Peritheciis stromaticis.*

3862. fimbriata, *Pers.* ... 1589 3863. coryli, *Batsch.* ... 1590

** OPHIOGNOMONIA. *Sporidia bacillaria.*

3864. melanostyla, *D.C.* 1591

*** EUGNOMONIA. *Sporidia uniseptata.*† *Sporidia ovoidea v. oblonga.*

3865. Epilobii, *Fckl.* ... 2196 3873. myricæ, *C. & E.* ... 2202
 3866. fenestrans, *Duby.* ... 2197 3874. sesleriæ, *Not.* ... 2203
 3867. depressula, *Karst.* 2198 3875. clavulata, *Ell.* ... 6083
 3868. tetraspora, *Wint.* ... 2199 3876. australis, *Winter.* ... 6492
 3869. euphorbiacea, *S. & B.* 6489 3877. petioliophila, *Peck.* 6491
 3870. rhododendri, *Rehm.* 2200 3878. magnoliæ, *Ellis, Amer.*
 Nat., 1883, p. 318.
 3871. tithymalina, *S. & B.* 6490
 3872. unæqualis, *Auers.* 2201

†† CLOSTERIGNOMONIA. *Sporidia fusoidea*.

3879. setacea, <i>Pers.</i> ...	2204	3892. alni, <i>Plow.</i> ...	2217
3880. ischnostyla, <i>Desm.</i> ...	2205	3893. alniella, <i>Karst.</i> ...	2218
3881. inclinata, <i>Desm.</i> ...	2206	3894. campylostyla, <i>Auers.</i> ...	2219
3882. setiformis, <i>Pers.</i> ...	2207	3895. leptostyla, <i>Fr.</i> ...	2220
3883. veneta, <i>Speg.</i> ...	2208	3896. errabunda, <i>Desm.</i> ...	2221
3884. amæna, <i>Auers.</i> ...	2209	3897. petiolicola, <i>Fckl.</i> ...	2222
3885. ostryæ, <i>Not.</i> ...	2210	3898. dryadis, <i>Auers.</i> ...	2223
3886. Arnstadtensis, <i>Auers.</i> ...	2211	3899. cerastis, <i>Reis.</i> ...	2224
3887. suspecta, <i>Fckl.</i> ...	2212	3900. graphis, <i>Fckl.</i> ...	2225
3888. lirelliformis, <i>Pass.</i> ...	2213	3901. pleurostyla, <i>Auers.</i> ...	2226
3889. erythrostoma, <i>Pers.</i> ...	2214	3902. sassafras, <i>Ell. & Er.</i> ...	6493
3890. Linneæ, <i>Auers.</i> ...	2215	3903. perversa, <i>Rehm.</i> ...	6494
3891. Fleischhakii, <i>Auers.</i> ...	2216	3904. gei, <i>Pat. & Doas.</i> ...	7460

*** *Species dubiæ.*

3905. acicularis, <i>Wallr.</i> ...	2227	3910. ariæ, <i>Fckl. F. Rhen.</i> ...	877
3906. curvirostra, <i>Sow.</i> ...	2228	3911. obliqua, <i>Auers. Pyr. f.</i> ...	126
3907. grossulariæ, <i>Fr.</i> ...	2229	3912. pungens, <i>Wallr. Comp.</i> ...	11.
3908. ulmea, <i>Schw.</i> ...	2230		803
3909. pruina, <i>Schw.</i> ...	4473	3913. curva, <i>Wallr. in Karst. Exs.</i> ...	349

*** CRYPTODERIS. *Sporidia triseptata*.† *Ostiolum sublaterale*.3914. lamprotheca, *Desm.* 3690†† *Ostiolum subcentrale*.

3915. Chamæmori, *Fr.* ... 3691 3917. misella, *Nsl.* ... 3693
 3916. riparia, *Nsl.* ... 3692

FUNGUS FORAYS, 1888.

HACKNEY NATURAL HISTORY SOCIETY, SATURDAY, SEPT. 8TH.—
 The Annual Foray was held as usual in Epping Forest, and although the attendance was small the weather was propitious, and the number of species met with considerably larger than for some years past. The cold summer was, doubtless, adverse to the prolific growth of fungi, yet, for some unaccountable reason, this excursion proved to be eminently successful, as far as species were concerned, although the individuals in each species were comparatively few. The Hawkwood and Burywood side of the Forest did not answer expectations at the beginning of the day, but after-

wards there was no reasonable ground of complaint. It is customary at these Excursions to keep a list of all the species met with and determined throughout the day, which, on previous occasions, have ranged from 60 or 80 to 100. On the present occasion the total attained was 144, of which 20 were new to the records of the Forest, and four of these occurred for the first time in Britain. Of the latter were *Agaricus* (*Naucoria*) *subglobosus*, A. & S., which appears to be rather a *Nolanea* than a *Naucoria*, from the colour and character of the spores; *Russula maculata*, Quelet, although it hardly seems to be a good and distinct species; *Lactarius aurantiacus*, Fr., and *Scolecotrichum uniseptatum*, B. & C. In addition to these *Russula armeniaca*, Cooke, which was first observed in the Forest nearly a month previously, and *Russula* (sub species) *granulosa*, Cooke, were again collected. The usual tea at Fairmead Lodge, an exhibition and examination of the specimens collected, with some explanatory observations by M. C. Cooke, concluded the day.

WOOLHOPE FIELD CLUB, OCT. 2 TO OCT. 5, 1888.—On this occasion, following the example of last year, two days were spent in the Forest of Dean, with the Speeche House, Coleford, as a centre. Whatever the cause, the anticipations raised by the success of the Hackney Foray in Epping Forest were disappointed, as may be seen from the account in "Gardener's Chronicle" for October 27. As for the fungi, they were few and far between, the oldest excursionist venturing the opinion that it was the worst prospect of a Fungus Foray which the Woolhope Club ever experienced, and this prognostic was ultimately verified. Thursday, being the "Club day," was devoted to a little excursion in the woods and lawns of Holm Lacey, where the bracken flourished in luxurious profusion, but fungi were more scarce than in the Forest of Dean. In the evening, after the inevitable dinner, the usual conversazione at the residence of Mr. Cam was crowded, when two or three papers were read—"On Dr. Bull's Birds of Herefordshire," by H. T. Wharton, M.A., F.Z.S.; "On Spiders," by the Rev. J. E. Vize, M.A.; and "Notes and Queries on *Russulæ*," by M. C. Cooke (the latter printed in the previous number). The final excursion to Pontrilas, on October 5, was characterized chiefly by the genial hospitality of the host and hostess for the day, but the baskets remained nearly empty, and not a specimen of any special interest or rarity could be found. "The social aspect of the week was a pleasant reminiscence, but the scientific phase undoubtedly a deplorable failure."

VESEY CLUB, SUTTON COLDFIELD, SATURDAY, OCT. 6.—The first Foray of this Club in Sutton Park did not exceed two hours, but a number of specimens, chiefly of the commoner species, were collected. In the evening a meeting was held at the Royal Hotel, with the Mayor in the chair, when W. B. Grove, B.A., read a paper on the Esculent fungi of the district, illustrated by specimens on the table and some well-prepared dishes of three or four species

which were placed before the company, and eaten with general satisfaction. The specimens collected during the day supplied the text for some remarks on the discrimination of species by M. C. Cooke, an animated discussion bringing a very pleasant evening to a close. The most interesting fungus exhibited was a specimen of the rare *Lactarius utilis*, Wein., which had been collected in Warwickshire during the previous week by Mr. J. E. Bagnall, A.L.S.

HAMPSHIRE FIELD CLUB, OCT. 11 AND 12, 1888.—Although the crop of fungi was far richer than in the Forest of Dean, it was by no means equal in the New Forest to what it has been in previous years, whilst better than last year. In 1887 only about 106 species were collected and recorded during the two days, but in 1888 no less than 171 species were determined, and of these sixty-eight were species found also in the previous year, whilst thirty-eight of those found in 1887 did not put in an appearance in 1888. The first day's excursion was made in Boldrewood and Knightwood; the second day starting from Lyndhurst Road Station, through fir plantations, following the stream to the Kennels at Minstead. The evening of the first day was devoted to an exhibition of the specimens collected at the Hartley Institution, Southampton, and a demonstration by M. C. Cooke, chiefly confined to edible and poisonous fungi, illustrated by specimens on the table. Some of the most interesting of the species found during the excursions were *Hydnum auriscalpium* in profusion, as well as some very fine specimens of *Agaricus* (*Tricholoma*) *imbricatus*, *Tremellodon gelatinosum*, *Lactarius cyathula*, *Clavaria pistillaris*, *Clavaria aurea*, etc.

ESSEX FIELD CLUB, SATURDAY, OCT. 27, 1888.—The weather was all that could be desired, and yet the attendance was below the average of several years. It was at first intended to scour the slopes of Monkswood, but ultimately it was decided to commence at Fairmead, working upwards to Highbeech. The dearth of fungi was remarkable as compared with the same localities six weeks previously. The only additions made to the Forest catalogue were *Agaricus* (*Myccena*) *parabolicus*, Fr.; *Agaricus* (*Stropharia*) *thraustus*, Kalch.; *Polyporus* (*Fomes*) *applanatus*, Fr.; *Polyporus radiatus*, Fr.; *Grandinia granulosa*, Fr.; *Phlebia merismoides*, Fr.; *Corticium atrovireus*, B.; *Clavaria grisea*, Fr.; *Peziza badia*, P.; *Peziza succosa*, B. The specimens were arranged at the close of the day on tables at the "Roebuck," at Buckhurst Hill, and after tea an "ordinary" meeting was held, when the following papers were read: "Notes on the Larger Fungi of Epping Forest," by M. C. Cooke, and "Unsolved Problems in Plant-Life," by G. Massee.

General reports from all parts of the country characterize the present year as remarkably unproductive in fleshy fungi, except for a short period soon after midsummer.

AUSTRALIAN FUNGI.

BY M. C. COOKE.

Polyporus (Ovini) tumulosus, *Cke.*

Pileo carnoso (3-4 unc. diam.), firmo, convexo, pallido, squamulis innatis obscurioribus ornato, margine primitus incurvo, carne albo; stipite brevi, crasso, æquali (1-2 unc. long 1 unc. crass) solido, ochraceo, mycelio profuso, albo, spongioso oriundo; tubulis adnatis, vel subdecurrentibus, latis; poris magnis, inæqualibus, angulatis. Sporis $12 \times 4-5 \mu$ pallide olivaceis.

On the ground. Near Brisbane. (*Bailey*, 607.)

"On the hard stony ridges about Brisbane, when trenching the land, large masses of mycelium are often met with. Some of the masses would weigh over a hundredweight. From its consistence one might fancy that a quantity of dough had been buried. My idea has always been that it was the mycelium of some *Boletus*." The specimens sent have some of the mycelium attached. Dr. Bancroft, who collected them, remarks that the natives make use of them for food, "a fact worth recording as so few are eaten by them." The description is drawn up from dried specimens, and no account was forwarded of the colour and appearance when fresh. Closely allied to *Polyporus Hartmanni*, C.

Grandinia glauca, *Cke.*

Subceracea, late effusa, adglutinata, glauca, ambitu determinato, hymenio æquali; granulis subconicis, æqualibus, minutis, confertis, concoloribus. Sporis $8 \times 4 \mu$.

On naked wood. Brisbane. (*Bailey*, 627.)

Aleurodiscus albidus, *Mass.*

Primum pezizæforme, margine erecto, tomentoso, inflexo, dein explanato-expanso, sæpeque confluenti; hymenio albo, subpulverulento, in sicco line inde rimoso; sporis ellipsoideis $10-12 \times 9 \mu$.

On branches. Brisbane. (*Bailey*, n. 620.)

Plants pure white, at first scattered, 2-3 lines in diameter, often becoming confluent and forming irregular patches; $\frac{1}{2}-\frac{3}{4}$ in. across.

Uromyces diploglottidis, *Cke. & Mass.*

Epiphylla. Soris sparsis, convexis, minutis, diu tectis, demum fissuratis, pallide fuseis, maculis orbicularibus virentibus insidentibus. Teleutosporis ellipticis, apice obtuse acuminato, basi in stipitem brevi attenuato. Episporio hyalino, crasso, plasmate granuloso, pallido, $50-60 \times 20-30 \mu$.

On fading leaves of *Diploglottis*. Brisbane. (*Bailey*, 626.)

Phoma plagia, *Cke. & Mass.*

Maculis determinatis, glaucescentibus, ellipticis vel confluentibus, margine lineato circumscripto; peritheciis minutissimis, atris, emergentibus; sporulis ellipticis, binucleatis, hyalinis, $8-9 \times 5 \mu$.

On palm leaves. Daintree River. (*Bailey*, 464.)

Phoma diploglottidis, Cke. & Mass.

Hypophylla, gregaria. Peritheciis semi-immersis, atris, minutis, papillatis; sporulis arcte amygdalæformibus, binucleatis, hyalinis, $10-11 \times 4-5 \mu$.

On fading leaves of *Diploglottis*. Brisbane. (Bailey, 626.)

Phyllachora alpinia, Cke. & Mass.

Maculis ex fusco piceo-nigris, elongatis, linearibus vel lanceolatis, hinc illic confluentibus; stromatibus atris, nitentibus, rugulosis, nunc orbicularibus nunc confluentibus. Ascis clavato-stipitatis. Sporidiis ellipticis, continuis, hyalinis, biserialibus $11-14 \times 5-6 \mu$.

On fading leaves of *Alpinia cærulea*. Brisbane. (Bailey, 623.)

NEW BRITISH FUNGI.

By M. C. COOKE.

(Continued from p. 42.)

Phoma tingers, Cke. & Mass.

Scattered. Perithecia minute, subglobose, black, papillate, seated on bright red spots, which penetrate the matrix; sporules oval, $3-4 \times 1\frac{1}{2} \mu$, hyaline.

On stems of *Delphinium elatum*. Kew, Jan., 1889.

Phoma Jacquiniiana, Cke. & Mass.

Caulicolous. Perithecia gregarious, minute, black, papillate, elevating and at length piercing the cuticle, sporules elliptical, nucleate at each end, hyaline, $15 \times 5 \mu$.

On stems of *Delphinium Jacquinianum*. Kew, Jan., 1889.

Phoma gibberoidea, Cke. & Mass.

Caulicolous. Perithecia scattered, membranaceous, rather soft and gelatinous, large, subglobose, then depressed, pierced at the apex, erumpent, dark brown, sporules profuse, cylindrical, obtuse, straight or slightly curved, hyaline, $14 \times 2 \mu$ on short sporophores.

On stems of *Delphinium elatum*. Kew, Jan., 1889.

Physarum Carlylei, Massee.

Sporangia stipitate, globose, orange-vermilion, minutely furfuraceous; stem about equal in length to diameter of sporangium, thick, rugulose, vermilion, expanding downwards into a small, wrinkled hypothallus; capillitium threads thin, yellow, forming a dense net, swollen at the angles, and there containing orange-coloured granules of lime; columella absent; spores globose, smooth, dirty violet, $7-8 \mu$ diameter.

On rotten wood. Carlisle (Dr. Carlyle).

A very distinct species, sporangia $1.5-2$ mm. high, scattered singly or in groups of two or three. Most nearly related to *Physarum rubiginosum*, Fr., but readily distinguished by the smaller spores, and the scattered, stipitate sporangia.

BRITISH PYRENOAMYCETES.

BY G. MASSEE.

(Continued from p. 6.)

Fam. II. **LOPHIOSTOMACEÆ**. Perithecia subsuperficial, ostiolum compressed, more or less broad, rimose.

GEN. 1. **LOPHIOSPHÆRA**, *Trev.* Sporidia oblong or fusiform, hyaline.

LOPHIOTREMA. *Sporidia 2, or many septate.*

L. hederæ, *Fckl., Sacc. Syll.* 5416.

On ivy. Exmouth, Eastbourne.

L. nucula, *Fr., Sacc. Syll.* 5419; *Hdbk.* 2540.

On oak bark.

L. præmorsum, *Lasch., Sacc. Syll.* 5427; *Hdbk.* 2545
(= *Loph. Jerdoni*, B. & Br.).

On *Rubus idæus* and elm. Mossburnford, King's Cliffe, East Bergholt.

L. semiliberum, *Desm., Sacc. Syll.* 5428; *Hdbk.* 2548.

On culms of reeds and grasses.

L. sexnucleatum, *Cke., Sacc. Syll.* 5432; *Hdbk.* 2543.

On nettle stems. Shere, near Guildford; North Wootton.

VIVIANELLA. *Sporidia appendiculate.*

L. angustilabrum, *B. & Br., Sacc. Syll.* 5448; *Hdbk.* 2542.

On gorse, elm, and ash. Leicester, Fordon, Shere, North Runceton, Lynn.

GEN. 2. **LOPHIOSTOMA**. Sporidia coloured.

* **LOPHIELLA**. *Sporidia boat-shaped.*

L. cristata, *Pers., Sacc. Syll.* 5397.

On twigs and branches. Wothorpe, Twycross.

** **GENUINA**. *Sporidia 3, or many septate.*

A. **EU-LOPHIOSTOMA**. *Perithecia rather small.*

† *Sporidia 3 septate.*

L. quadrinucleatum, *K., Sacc. Syll.* 5451.

On *Rhamnus frangula*. North Wootton.

L. viridarum, *Cooke, Sacc. Syll.* 5457; *Hdbk.* 2539.

On decorticated twigs of maple. Shere.

†† *Sporidia multiseptate.*

L. fibritectum, *B., Sacc. Syll.* 5476; *Hdbk.* 2541.

On bleached larch planks. King's Cliffe.

L. caulium, Fr., *Sacc. Syll.* 5452; *Hdbk.* 2546.

On dead stems of *Epilobium hirsutum*, etc. Shere.

L. arundinis, Fr., *Sacc. Syll.* 5486; *Hdbk.* 2547.

On reeds and grasses. Shere, Chiselhurst.

B. NAVICELLA. Perithecia large.

L. macrostomum, Tode, *Sacc. Syll.* 5490; *Hdbk.* 2537.

On sycamore and holly. King's Cliffe, East Bergholt, Twycross, Shere, Kidbrooke, Orton Wood, Leicester; Forbes, N.B.

L. excipuliforme, Fr., *Sacc. Syll.* 5491; *Hdbk.* 2544.

On bark, wood, and furze. King's Cliffe, Sibbertoft.

C. ROSTELLA. Sporidia appendiculate.

L. bicuspidatum, Cke., *Sacc. Syll.* 5512; *Hdbk.* 2538.

On decorticated twigs. Shere, Darent, Leatherhead, King's Lynn.

GEN. 3. **LOPHIDIUM**, *Sacc.* Sporidia muriform, coloured.

L. compressum, P., *Sacc. Syll.* 5531 (= *L. angustatum*, Fekl.).

On willow. King's Lynn, Northampton.

MEMORABILIA.

LYCOPERDON MISSOURIENSE, *Trelease. Trans. St. Louis Acad. Sci., Dec., 1887.*—This undoubtedly is the same as *Lycoperdon lilacinum*. B. & M.

POLYPORUS SALIGNUS, *Fries.*—There is every probability that the *Polyporus obducens*, Fr., is a resupinate form of the above. Both have been found together, both are stratose, and have identical spores. A form of *P. salignus*, in Herb. Berk., is placed with, and referred to, *P. zonatus*, Fries, which latter should not be stratose.

LOPHODERMIVM PETERSII, B. & C., *Sacc. Syll.* 5822. On branches of *Cupressus* and *Juniperus*. Perithecia 1-1½ mm. Sporidia 60 × 2 μ. This is identical with *Colpoma juniperina*, Cooke & Peck.

COLPOMA AZALEÆ, *Schw.*—Perithecia 1-3 mm. Sporidia 90 × 2 μ.

HYSTERIVM CARMICHAELIANVM, *Sacc. Syll.*, 5670.—Sporidia 30-32 × 18 μ, otherwise the same as in *H. repandum*, Blox. (*Sacc.* 5566), hence a species of *Farlowia*.

HYSTERIVM INSIDENS, *Schweiz. (Sacc. Syll.* 5762).—Sporidia in authentic specimen from Schweinitz are not muriform, but 7-9 septate, with the third or fourth joint swollen, 45-50 × 15 μ,

scarcely distinct from *H. Berengeri*, Sacc., but certainly belonging to *Hysterium*.

BOTRYODIPLODIA ACINOSA, Fr.—Specimens of *Sphaeria acinosa* from Moug. & Nestl. Exs., No. 769, and apparently direct from Mougeot, are respectively a *Botryodiplodia*. Sporules scarcely constricted, dark brown, $16-20 \times 8-10 \mu$, very variable in size.

AGARICUS (LEPIOTA) ECHINODERMATIS, Cke. & Mass. in *Grevillea* xvi., p. 30.—On comparison this does not appear to be specifically distinct from *A. (Lepiota) asprata*, Berk.

HEMIARCYRIA LEOCARPA, Cke., *Myxos U.S.*, p. 405, *Sacc. Syll.* 1519.—In Saccardo this is stated to be a species of Rostafinski's (Mon. p. 267), but its publication as a species was subsequent to the Monograph by Rostafinski, and consequently could have no mention in that work.

TRICHIA ABRUPTA, Cke., *Myxos U.S.*, p. 404, *Sacc. Syll.* 1511.—No description given in the "Sylloge," whereas a full diagnosis was published as above.

TRICHIA AFFINIS, D'By., *Sacc. Syll.* 1499.—The character of the spores, in so far as they differ from those of its allies in the bands being punctate, is not mentioned in the "Sylloge" at all; and further, the threads are not "connected in a net."

CLAVARIA VELUTINA, Ell. & Ev., *N. Amer. Fungi*, No. 2024.—This is *Lachnocladium semi-vestitum*, B. & C. Spores globose, colourless, $4-5 \mu$; Berkeley's type is from New Jersey.

CLAVARIA FRAGRANS, Ell. & Ev., *N. A. F.* 2023.—This is *Lachnocladium Micheneri*, B. & C.

SOME EXOTIC FUNGI.

By M. C. COOKE.

Marasmius sanguineus, Cke. & Massee.

Pileo convexo, membranaceo, sanguineo ($1-1\frac{1}{2}$ cm. diam.) glabro, lævi; stipite elongato, glabro, pallido (4 cm. long), lamellis paucis, distantissimis, ventricosis, adnexis, pileo concoloribus.

On dead leaves. Laion Forest, Dominica. West Indian Exploration Committee (*Ramage*).

Allied to *Marasmius rhabarbarinus*, Berk.

Polyporus (Petalodes) cervicornis, Cooke.

Pileo carnosolento, glabro, e basi stipitiformi brevi ramoso-extenso, tota albido, segmentis planis, digitato-furcatis, uni-vel bi-rarius tri-dichotomis, apicibus acutis; poris brevibus, rotundatis, minutis, æqualibus.

On logs. Forest St. Lucia.

A singular species, resembling a *Clavaria* in form, about 3 inches in length, deeply cut into segments, which do not exceed $\frac{1}{2}$ cm. in width, with the hymenium on the under surface.

Bovista asterospora, *Massee*.

Peridio globoso, papyraceo, ochraceo, sursum glabro, deorsum scrobiculato, vertice rumpente; floccis hyalinis, parce ramulosis, 6-7 μ cr., sporis globosis, ecaudatis, dense majusculaque spinulosis, umbrinis, 7-8 μ diam.

On the ground. Dominica (*Ramage*).

From half to two-thirds of an inch diameter, sometimes furnished with a long, slender root. Well marked by the scrobiculate base of the peridium, colourless threads, and densely spinulose spores.

Lycoperdon Dominicensis, *Massee*.

Peridio subgloboso, depresso, sæpius in basin stipitiformem attenuato, verrucis spinuliformibus, vel pyramidatis, demum deciduis obsito; basi sterili distincta; floccis parce ramulosis, hyalinis, 5-6 μ cr., sporis globosis, glabris, longe pedicellatis, e fusco dilute purpureis, 5-6 μ diam., pedicello 20-25 \times 1.5 hyalino.

On the ground. Dominica (*Ramage*).

Peridium half to two-thirds of an inch across. Remarkable in having the spores furnished with long persistent pedicels as in the allied genus, *Bovista*.

Lepidoderma stellatum, *Massee*.

Peridiis sphaericis, stipitatis, subtus umbilicatis, nigro-fuscis, squamis albis variegatis, majusculis, maturitate stellatim ruptis; stipite crassiusculo, erecto, striatulo, albo; columella hemispherica vel subclavata, albido-flava; floccis capillitii tenerrimis, flexuosis, incoloribus; sporis laevibus, violaceis, 10-12 μ diam.

On rotten wood. Dominica (*Ramage*).

A very fine and distinct species, scattered or gregarious, 2.5-3.5 mm. high. When young the sporangia are pure white, the outer coat eventually becoming broken up into large scales. When mature the sporangia split nearly to the base into 4-6 irregular, acute segments.

SACCARDO'S SYLLOGE, VOL. VI.

This volume comprises the residue of the *Hymenomycetes* not already included in Vol. v., as the *Polyporei*, *Hydnei*, *Thelephorei*, *Clavariæ*, and *Tremellini*. As far as a hasty and cursory glance can impress anyone, the conclusion must be satisfactory. Nothing novel or sensational in classification has been attempted, and if all the innumerable species, the diagnoses of which have hitherto been scattered in all directions, have been carefully collected into one volume enough has been done to merit the thanks of all work-

ing mycologists. Some omissions will, doubtless, be discovered, since we have already failed to trace some of the species described in Schweinitz's "Synopsis Carolinensis," but let us hope that the omissions are but few. It would be absurd to attempt any elaborate criticism of a volume of this character without having applied the crucial test of experience. Those who are called upon to use it day by day will soon discover all that can be urged against it. Altogether, we are strongly of opinion that these two volumes (v. and vi.), which contain the *Hymenomycetes*, will be more used and better appreciated than any of those which preceded them. About two additional volumes, which are promised for 1889, will complete this arduous undertaking, and we congratulate Professor Saccardo on his energy and promptitude. One part has already appeared since the foregoing paragraph was written.

VOL VII., PART II.

This part, which completes the seventh volume, contains some 400 pages, and is devoted to the *Ustilagineæ* and the *Uredineæ*, compiled by Dr. J. B. de Toni. Very little criticism can be offered on this part, in which the usual classification prevalent throughout the work is continued. There are the *Amerosporæ*, *Didymosporæ*, *Phragmosporæ*, and *Dictyosporæ*, and finally a subsidiary group of imperfect forms (*Status secundarii*), but nothing sensational. It is strange how an error which has once got into print becomes perpetuated. At p. 768 two species of *Milesia* are described; one of these is *Milesia Polypodii*, B. & White, which is the type, and the only species in fact. The other is *Milesia Polygoni*, B. & White, which is merely the copy of a misprint in the "Annals of Natural History," No. 1,709, and really was intended for *Milesia Polypodii*.

No. 2,959, *Æcidium incarcerationum*, B. & Br., is only a synonym of *Doassansia Sagittariæ*.

No. 2,930, *Æcidium strobilinum*, A. & S., has already appeared in Vol. iii. (No. 3,655) as *Pleosporopsis strobilinum*, (Erst.

By some oversight *Testicularia*, Klotsch., has been omitted from the *Ustilagineæ*, to which it is clearly allied, and inserted in *Lycoperdaceæ* (Vol. vii., p. 150), with which it has no affinity.

However, these are merely stray suggestions which have occurred to us in casually turning over the pages. The merits and demerits of such a work do not appear until tested by experience. At any rate this, as well as the kindred volumes, will be indispensable to the library of the mycologist, especially when the appendices have swept up all the stray species from out-of-the-way places, which may have been overlooked and forgotten, notably those of which the diagnoses have been issued with the specimens in some *excicati*, and are not published elsewhere.

BRITISH UREDINEÆ AND USTILAGINEÆ.*

The promised "Monograph of the Uredines" has now been published in a handsome volume, against the "get-up" and appearance of which nothing can be urged of more importance than the colour of the binding, which may be eccentric, but it is not "nice." Fortunately neither a good man nor a good book depends on the colour of the coat in an estimate of value. It is generally enough known, amongst readers of this journal, that we do not accept the hypothesis advanced by Mr. Plowright as sufficient or as proven. Apart from this, and with a reservation to that extent, we proceed to an unprejudiced examination of the work in question. The first hundred pages are biological. The remaining two hundred are systematic. The former portion includes—Mycelium of the Uredineæ, Spermogonia, Æcidiospores, Uredospores, Teleutospores, Heteræcism, Mycelium of the Ustilagineæ, Germination of Teleutospores, Infection of Host Plants, Spore Culture, and Artificial Infection of Plants. The latter portion contains descriptions of the British Uredineæ, Imperfect forms, Descriptions of British Ustilagineæ, Allied and associated species, The Barberry law of Massachusetts, Glossary, List of authors quoted, Index of Host plants, Biological Index, and Index of species, the whole illustrated with 13 woodcuts and 8 plates. The type employed is new and clear, the pages free from all crowding, the paper good, so that altogether it is a book agreeable to handle and read.

The author appears to have done his work as carefully and conscientiously as the printer. The biological portion is forcibly and lucidly explained, and the peculiar views are urged with moderation, but with unflinching perseverance. It is no small praise to add that throughout the whole work there is an entire absence of those disagreeable personalities, which serve no useful purpose, and are petty in themselves, but which have sadly disfigured some scientific books. This is, we presume, the first time that Mr. C. B. Plowright has made his appearance as the author of a whole volume, entirely to himself. We congratulate him most heartily on the result, for the slight criticisms we shall hereafter make are insufficient to affect the general character of the work.

There appear to be some few botanists who love to banish old and well-established specific names in favour of others, which they are ready to suppose have a still older and prior claim. It is not too much to say that, even in cases where priority could be claimed, it is seldom advisable to increase synonymy by such unnecessary alterations. Whenever the alteration is made, it should be made,

* "A Monograph of the British Uredineæ and Ustilagineæ," by C. B. Plowright, with woodcuts and eight plates. London: Kegan Paul, Trench, and Co., 1889.

at least, upon indisputable grounds. It was some satisfaction to us to discover that our author had not followed some Continental authors in this iniquity, but retained still the names sanctioned by long usage. There are, nevertheless, one or two instances in this work in which "emendations" are made to which we take exception.

Puccinia arundinacea, Hedw., is replaced by *Puccinia phragmitis*, on the ground that the uredospores were described previously as *Uredo phragmitis*, Schum.

Puccinia truncata, B. & Br., is superseded by *Puccinia iridis*, because the uredospores were described first as *Uredo iridis*, D.C.

Puccinia luzulæ, Lib., has to give way for a similar reason to *Puccinia oblongata*.

Puccinia noli-tangeris, Corda, has been made to succumb to *Puccinia argentata*.

Puccinia anemones, Pers., is abolished in favour of *Puccinia fusca*, because Relham called it *Æcidium fuscum*.

Puccinia scorodoniæ, Link., is superseded by *Puccinia annularis*, because its uredospores were called *Uredo annularis* by Strauss.

But, worse than all, *Puccinia sparsa*, Cke., has been supplanted by *Puccinia tragopogi*, because the *Æcidium tragopogi* of Persoon was first described; altogether ignoring the fact that for 45 years there has been another *Puccinia tragopogi* described and figured by Corda, as *P. tragopogonis*.

We contend that all these changes were quite unnecessary, and hence unjustifiable; because "the essential point in nomenclature is to avoid, or to reject the use of forms, or names, that may create error or ambiguity, or throw confusion into science. Next in importance is the avoidance of any useless introduction of new names." (*Laws of Botanical Nomenclature*.)

"It is impossible to deny a certain right of *custom*; the maintenance of well-known names of forms in frequent use often gives clearness or precision, and does away with the necessity of new ones." (*Commentary*.)

"Nobody is authorized to change a name because it is badly chosen or disagreeable, or another is preferable or better known, or for any other motive, either contestable or of little import." (*Laws of Botanical Nomenclature*.)

There is another point on which there will doubtless be students, as ignorant as ourselves, who would desire to be enlightened.

At page 150 occurs *Puccinia variabilis*, Grev., Fl., Ed., p. 431, with its *Æcidiospores* = *Æcidium Taraxici*, Grev., Fl., Edin., p. 444.

Again, at p. 186 is *Puccinia taraxici*, Plow., with its synonym, *Puccinia variabilis*, Grev., Fl., Edin., p. 431. Does the description by Greville fit both species, or is there only one? Our own experience is in favour of there being two distinct species of *Puccinia* on leaves of *Taraxacum*, the teleutospores of which are readily distinguishable by the microscope; but surely both were

not included within the one description by Greville, or, if so, "in part" should have followed each citation.

Again, it seems rather puzzling to some, who may not be wedded to a preconceived theory, that *Æcidium ranunculacearum*, D.C., should furnish at p. 130 the *Æcidiospores* of *Uromyces dactylidis*, at p. 130 the *Æcidiospores* of *Uromyces Poæ*, at p. 178 the *Æcidiospores* of *Puccinia magnusiana*, at p. 180 the *Æcidiospores* of *Puccinia perplexans*, and at p. 266 the *Æcidiospores* of *Æcidium ranunculacearum*, doubtfully belonging to any *Uromyces* or *Puccinia*. Doubtless this is one of the things which Lord Dundreary would have said "no feller can understand."

It has yet to be shown that Biological characters alone are sufficient to constitute that variable quantity called "a species."

We fail to appreciate the advantage of including at all in a work of this kind such species as *Æcidium strobilinum*, A. & S., which is not an *Æcidium* at all, but belongs to the Sphærospideæ, as *Pleospopsis strobilinum* (Sacc. Syll., Vol. iii., p. 693).

And *Æcidium incarcerationum*, B. & Br., which is undoubtedly a synonym of *Doassansia Sagittariæ*, Fekl., afterwards entered on p. 295.

And, finally, *Tuberculina persicini*, Ditm., one of the Hyphomycetes, included by Saccardo (Sylloge, Vol. iv., p. 653) in the Tuberculariæ, with which arrangement we concur.

This much is sufficient to show that, with the exception of certain doctrines, we can find but little to complain of in this book, but, on the contrary, can conscientiously advise all our readers to possess themselves of a copy before it is out of print, and not wait to make wry faces when they are compelled to buy it up as a "scarce" work at fancy prices.

M. C. C.

FUNGI SCANDINAVICI.

Supposed that a sufficient number of subscribers should be interested, I intend, with the assistance of experienced men of science, to publish a collection of dried (and pressed) Fungi, especially Scandinavian. The work, that might have the title of

"FUNGI EXSICCATI PRESERTIM SCANDINAVICI,"

is intended to comprehend, as far as possible, all the orders and families of the Fungi. It will be distributed in fascicles of 100 species or forms. The Fungi will be fixed on loose sheets in order to afterwards be arranged at will. The number of the fascicles is undefined. Until further notice, 1-3 fascicles a year will be published from 1889 forward. Price per fascicle, 11s., exclusive the freight. It may be subscribed to one, several, or all fascicles, at pleasure. Orders are to be addressed to me before 1 May, 1889.

Contributions respectfully requested.

LARS ROMELL,

Fil. Kand., Karlavägen 28, Stockholm, Sweden.

OMITTED DIAGNOSES.

The following are some of the Diagnoses mentioned in "Grevillea," xvii., p. 19, as omitted from Saccardo's "Sylloge."

Cercospora calthæ, Cooke.

Maculis orbicularibus, epiphyllis, fuscis, hyphis brevibus, hyalinis; conidiis cylindræis, supra subattenuatis; septis vix distinctis, $30-35 \times 2 \mu$.

On leaves of *Caltha*. Forres, N.B.

Cercospora longissima, Cke. & Ellis.

The same as *C. beticola*, Sacc.

On beet leaves. New Jersey. (Ellis, 2721.)

Heterosporium maculatum, Klot. in Herb. Kew.

Cæspitulis minutis, gregariis. Hyphis brevibus, septatis, flexuosis, brunneis, mycelio radiante, concolori, oriundis. Conidiis ellipticis, utrinque rotundatis, 1-3 septatis, fuscis, $25-28 \times 12 \mu$. Episorio minute granuloso-asperatis.

On stems and leaves of Monocotyledons—apparently *Typhæ* and *Sparganium*.

Dendryphium quadrisepatum, Cooke.

Tenue effusum. Hyphis fasciculatis, erectis, obscure septatis, ad apicem ramulosis, ramulis plerumque oppositis; conidiis cylindræis, quadrisepatis, nec constrictis, atro-fuscis, $30-35 \times 8-9 \mu$.

On decorticated *Magnolia*. New Jersey. (Ellis.)

Coniothecium subglobosum, Cooke.

Acervulis orbicularibus, applanatis, atris (sub. 1 mm. diam.), conidiis subglobosis vel ovatis, 1-3 septatis, sæpe cruciatis, fuscis, 14×10 , vel $15 \times 8-9 \mu$.

On leaves of *Calocasia* ("tara"). Raritonga.

Macrosporium chelidonii, Rabh. Unio. Itin. xxxvii.

The specimens in the Kew Herbarium Exsiccati are without fruit, and no diagnosis is within our knowledge.

On *Chelidonium glaucium*. Alghero. (Dr. Marcucci.)

Macrosporium cæspitosum, Rabh. Unio. Itin. xxxii.

Cæspitula initio sparsa, demum confluentia; hyphæ erectæ, rigidæ, simplices, in morem *H. subulati*; sporæ omnium maximæ, oblongo-cylindricæ v. clavatæ, plus minus curvulæ, diametro (.0006-.0007"), 4, 5-6 longiores, multi-septatæ, basi sæpius in caudam stipitiformem productæ.

On twigs of *Quercus*. Tempio-Gallura. (Dr. Marcucci.)

Macrosporium elegantissimum, Rabh. Unio. Itin. xxxv.

Cæspitulis densis, erumpentibus, atris, floccosis; floccis simplicibus, subtilibus, hyalinis; sporis subglobosis oblongisve, varie

divisis, sæpe muriformibus, dilute aureis, septis obscuris, diametro aequalibus vel duplo longioribus. *Rabh. Fung. Eur.* 2883.

On twigs. Alghero, Sardinia. (*Dr. Marcucci.*)

The type specimen is not a *Macrosporium*.

Macrosporium oleandri, *Rabh. Unio. Itin.* XXIX.

"Sporis oblongis v. subelavatis, tetrablastis '0006" longis."

On twigs of *Nerium oleander*. Tortoli. (*Dr. Marcucci.*)

The Kew Herbarium specimens are sterile, and the sole description is given above.

Macrosporium spaniotrichum, *Rabh. Unio. Itin.* XXIX.

Cæspitulis gregariis, erumpentibus, minutis, atris. Hyphis brevibus, simplicibus, septatis, sporum æquilongioribus, hyalinis; sporis elongato-ellipticis, triseptatis (nondum muriformibus) fuliginis, $30 \times 10 \mu$.

On herb stems. Terranova. (*Dr. Marcucci.*)

This is evidently not a *Macrosporium*.

Macrosporium graminum, *Cooke Rav. Amer. Ex.* 606.

Effusum, tenuissimum, nebulosum. Hyphis repentibus, demum ramulis assurgentibus, flexuosis, septatis, fuscis conidiis clavatis 4-5 septatis, subconstrictis, dein muriformibus, fuscis, $60-70 \times 22 \mu$.

On leaves of bamboo. S. Carolina.

Cladosporium chaetomium, *Cooke.*

Cæspitulis minutis, in foliis viventibus, erumpentibus, atris, peritheciis *Chaetomii* simulantibus. Hyphis densissime congestis, flexuosis, simplicibus, septatis, fuscis; conidiis uni-dein triseptatis, cylindricis, obtusis, $30-40 \times 7 \mu$, pallide fuscis.

On leaves of *Euphorbia*. New Jersey. (*Ellis No.* 2289.)

Cladosporium gleditschiæ, *Cke. in Rav. Amer. Ex.* 297.

Carpigenum, effusum, olivaceum. Hyphis repentibus, assurgentibus, tenuibus, flexuosis, septatis, fuscis; conidiis arcte ellipticis, demum elongatis, 1-3 septatis vix constrictis, succineis, $12-20 \times 4 \mu$.

On legumes of *Gleditschia*. S. Carolina.

Cladosporium microporum, *Rabh. Unio. Itin.* XLII.

Hypophyllum. Cæspitulis erumpentibus, gregariis, minutissimis, atris. Hyphis conidiisque—?

On leaves of *Nerium oleander*. Gonnos-Fanadiga. (*Dr. Marcucci.*)

In our specimens only a minute species of *Coniothyrium* can be found.

Cladosporium obtectum, *Rabh. Unio. Itin.* XXXVI.

Epiphyllum, tenue effusum. Hyphis repentibus, demum assurgentibus, tenuibus, flexuosis, septatis, fuscis; conidiis ellipticis,

cylindræcis, vel clavulatus, uniseptatis, utrinque subattenuatis, pallide fuscis, $12-16 \times 5-6 \mu$.

On *Artemisia maritima*. Alghero. (Dr. Marcucci.)

Cladosporium pelliculosum, Berk. & Curt. in Herb.

Scarcely appears to differ from *Cladosporium effusum*, B. & C., and does not seem to have been described.

On leaves of *Polygonum punctatum*, *Lobelia*, etc. S. Carolina.

Cladosporium subnodosum, Cke. in Rav. Amer. Ex. 294.

Epiphyllum. Cæspitulis orbicularibus (circa 1 mm.), atro-olivaceis, compactis. Hyphis flexuosis, crassiusculis, fuscis, septatis, ad septis nodulosis, ad apicem, hyalino-attenuatis; conidiis ellipticis, utrinque rotundatis, 1-3 septatis, olivaceis, minutissime granulato-asperatis, $15-25 \times 9-10 \mu$.

On leaves of *Spinacia*. S. Carolina.

Probably *Heterosporium*.

Ceratophorum subulatum, Cke. & Ellis. = *Clasterosporium subulatum*, Cooke & Ellis.

Effusum, atrum. Hyphis repentibus, ramosis, parcis, septatis, conidiis majusculis, rectis, obclavatis, 5-7 septatis, nucleatis, fuligineis, apice in cuspidem longam, hyalinam, continuam desinentibus, $70-100 \times 15 \mu$, cum cuspidem 180μ long.

On bark of *Liquidambar* and *Castanea*. S. Carolina and New Jersey.

Helminthosporium avenaceum, Curtis Herb.

Effusum, atrum, tenue velutinum. Hyphis erectis, crassiusculis, septatis, subopacis, conidiis cylindræcis, vel subfusoides, utrinque rotundatis, 4-5 septatis, pallide melleis $75-85 \times 15 \mu$.

On straw. United States.

Helminthosporium collabendum, Cooke.

Effusum, indeterminatum, atrum. Hyphis flexuosis, septatis, hinc illic breviter furcatis, fuscis; conidiis fusiformibus triseptatis (rarius quadrisepatis) aureo-fulvis, $60-70 \times 12-14 \mu$. Episporio tenui, collabendo.

On bark. S. Carolina.

Helminthosporium gramineum, Rabh. Herb. Myc. 332.

Tenuissime effusum. Hyphis brevibus, subflexuosis, pallide fuscis. Conidiis solitariis, elongato-cylindræcis, 3-6 septatis.

On fading leaves of *Hordeum vulgare*. Poppelsdorf.

Allied to *H. gracilis*, Wallr., but differing in the conidia being solitary and elongated-cylindrical, 3-6 septate.

Helminthosporium minimum, Cooke.

Tenne effusum, velutinum, atrum. Hyphis erectis, tenuibus, fuscis (vix 100μ longis excedentibus). Conidiis fusiformibus, utrinque obtusis, triseptatis, hyalinis, $12-14 \times 3-4 \mu$.

On decorticated branches. Hereford.

Helminthosporium palmetto, *Gerard*.

Tenuissime in plagis orbicularos, effusum quandoque confluens. Hyphis erectis, crassiusculis, septatis, fuscis. Conidiis fusiformibus, triseptatis, aureo-succineis, $45 \times 8 \mu$.

On leaves of Palmetto. Louisiana, U.S.

Helminthosporium resinaceum, *Cooke*.

Effusum, indeterminatum, atrum, opacum. Hyphis simplicibus vel furcatis, septatis, constrictis, crassiusculis, fuligineis. Conidiis subfusiformibus, majusculis, 7 septatis, quandoque leniter curvulis, $70 \times 10-12 \mu$, olivaceo-fuscis.

On Pine resin. Shere.

Helminthosporium reticulatum, *Cooke Fun. Britt. I.*, 360.

Reticulato-effusum, maculas irregulares efformantibus. Hyphis fasciculatis, flexuosis, tenuibus, septatis, fuscis, ad apicem hyalinis. Conidiis subfusiformibus, utrinque obtusis, triseptatis, constrictis, fuscis, $22 \times 7 \mu$.

On dead leaves of *Fraxinus*. Thirsk, Yorkshire.

Helminthosporium congestum, *Berk. & Curt.*

This is doubtful. The specimen from Wright (Cuba) is barren, and hence cannot be described. There is no specimen under this name in the Berkeley Herbarium, and no diagnosis appears to have been published.

Verticillium puniceum, *Cke. & Ellis*.

Puniceum, subcompactum; cæspitulis pulvinatis, ellipticis vel confluentibus. Hyphis tenuibus, septatis, ramosis; ramulis verticillatis, brevibus, roseo-tinctis; conidiis ellipticis, minutis, continuis, profusis, hyalinis, $4 \times 2 \mu$.

On wood of *Quercus*. Newfield, N.J. (*Ellis* 2222).

Botrytis cubensis, *Berk. & Curt.*

This proves to be only a synonym of *Peronospora cubensis*, B. & C.

Botrytis brunneola, *Rabh. Herb. Myc.* 771.

Acervules velutinis, effusis, olivaceo-fuscis; hyphis erectis, subsimplicibus, fuscis; ramis verrucæformibus s. elongatis. Conidiis oblongis, vel ovoideis, hyalinis, e verrucis innovantibus, episporio pallide colorato ($8-10 \times 5-6 \mu$).

In capitulis humi jacentibus. Doemitz.

Botrytis sonchicola, *Rabh. Herb. Myc.* 175.

This is fully described in "Botanische Zeitung" for 1852, p. 620.

Botrytis atrofumosa, *Cooke & Ell.*

Effusa, indeterminata, atrofumosa, hyphis tenuibus, gracilis, sparse furcatis, septatis, subhyalinis; conidiis profusis, agglomeratis, subglobosis, continuis, fuscis, $5-6 \times 4 \mu$.

On *Quercus* bark and wood. S. Carolina. (*Rav.* 3275). N. Jersey, U.S. (*Ellis* 2773.)

Sepedonium armeniacum, Berk. & Curt.

Specimens of *Sepedonium subochraceum*, B. & C., were distributed by Curtis under this name, and it is, therefore, synonymous.

Fusidium leptospermum, Pass. in Speg. Dec. 54.

Maculæ hypophyllæ, albæ, sabrotundæ, parvulæ; conidia tenuia, fusiformi-clavata, hyalina $30-45 \times 2\frac{1}{2}$ foveantes.

On leaves of *Ranunculus bulbosus*. Parma.

Cylindrium minutissimum, Rabh. Univ. Itin. XXIV.

Perexiguum; conidiis cylindricis, utroque polo rotundatis, achrois, hyalinis, apicibus concatenatis; catenis plus minus ramosis.

In consortio *Torulæ*. Lanusei. (Marcucci.)

Oidium obtusum, Thum. Myc. Univ. 289.

Hyphis longissimis, simplicibus, rectis, interdum septatis; conidiis cylindræis, utrinque obtusis, hyalinis, longitudine varie, $6-16 \mu$ long, 5μ crass.

On cheese. Bayreuth.

Oidium cydoniæ, Pass. in Thum. Myc. Univ. 1667.

Conidia elliptica, sub-solitaria, vel duo triaconcatenata, hyphis longis fulta, $22-23 \mu$ long, 15μ crass.

On leaves of *Cydonia vulgaris*. Parma.

Sterigmatocystis agaricini, Therry MSS. (nec Speg. MSS.).**Sporotrichum resinæ**, Fries = *Racodium resinæ*, Fr. Obs. 1. 216.**Haplaria Elisii**, Cooke.

Tenuiter effusa, purpureo-fusca. Hyphis tenuibus, erectis, simplicibus, subopacis, atro-fuscis; conidiis ovatis, continuis, concoloribus $4 \times 2 \mu$.

On wood of *Abies Douglassi*, etc. California. New Jersey, U.S.

SOME BRISBANE FUNGI.

BY M. C. COOKE.

Mutinus sulcatus, Cke. & Mass.

Stipite cylindrico, cervino (10 cm. long, $1\frac{1}{2}$ cm. crass), parte sporifera $\frac{1}{5}$ totius receptaculi altitudinis longa, campanulato, longitudinaliter sulcato, transverse ruguloso, apice demum pervio, vel lacerato, margine contiguo, atro-olivaceo. Volva ampliata, alba. Sporis $3 \times 1\frac{1}{2} \mu$.

On the ground. Brisbane. (Bailey, 640.)

Strumella hysteroidea, Cke. & Mass.

Sporodochiis gregariis, erumpentibus, prominulis, elongato-ellipticis, hysteroformibus (1-2 mm. long, $\frac{1}{2}$ -1 mm. diam.), compactis, atris; hyphis brevissimis, conidiis sphaeroideis, vel sub-sphaeroideis, continuis, olivaceis ($7-8 \mu$ long).

On denudated branches. Brisbane. (Bailey, 635.)

Hypoxyton (Placoxylon) ellipticum, Cke. & Mass.

Parallelum, ellipticum (3.5×2 mm.), convexo-planum, atrum, opacum, intus concolorum. Ostiolis minutis, congestis, punctiformibus. Ascis cylindraceutis. Sporidiis fusiformibus, continuis, fuliginosis, primitus nucleatis ($23.25 \times 6.7 \mu$).

On decorticated wood. Brisbane. (Bailey, 631.)

Allied to *H. allantoideum*, but differing in fruit and in more distinct ostiola.

Uromyces phyllodiae, Cke. & Mass.

Maculis ellipticis, bullatis, fuscis; soris minutis, orbicularibus, congestis, compactis, brunneis, demum nudis, nec pulverulentibus, (maculis 3-5 mm. long). Uredosporis nondum vidi. Teleutosporis ellipticis, obtusis, rarius apiculatis, fuscis; episporio minute verruculoso, crassiusculo, hyalino, ad apicem incrassatis ($40.45 \times 16.18 \mu$).

On phyllodes of *Acacia*. Brisbane. (Bailey, 643.)

Resembling in some particulars *Uromyces fusisporum*, C. & M., but differing in the sori being crowded on bullate spots, in their brown colour, and in the form of the broader teleutospores.

THREE NATAL FUNGI.

By M. C. COOKE.

Agaricus (Schulzeria) umkowaani, Cke. & Mass.

Pileo carnoso, hæmispherico, explanato, sicco, minute granuloso, albido (3-4 unc. lato), stipite fusiformi-radiato (12-16 unc. long, $\frac{1}{2}$ unc. crass), solido, glabro, concolori; lamellis liberis, postice attenuatis, confertis, sublatissimis, albis, sporis ellipticis, $10 \times 4.5 \mu$. Edulis.

On the ground. D'Urban. (Wood, 4060.)

Two-thirds of the stem rooting in sand.

"Called 'Umkowaan' by the natives, and is delicious when cooked, much superior to the common mushroom."

Uredo celastrineæ, Cke. & Mass.

Soris hypophyllis, magnis, bullatis, epidermide tectis, gilvis; uredosporis elongato-ellipsoideis ($40.50 \times 14.16 \mu$). Episporio crassiusculo, granuloso-verrucoso, hyalino, plasmate aurantiaco.

On living leaves of *Salacia Kraussii*. D'Urban. (Wood, 4028.)

Æcidium Royenæ, C. & M.

Maculis nullis. Hypophyllum, pseudoperidiis gregariis, totius superficies occupantibus, cupularibus, aureis, margine minute serrulato, albo, æcidiosporis concatenatis, quadratis, minute rugulosis, 18.12μ diam.

On leaves of *Royena pallens*. Borea. Natal. (Wood, 4078.)

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NOTICE.—A temporary derangement and breakdown at the plate printers has caused a short suspension of the work on "Illustrations of Fungi," which, it is hoped, will be restored and carried on vigorously next month.

Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

BRITISH PYRENOAMYCETES.

By G. MASSEE.

(Continued from p. 58.)

Fam. 12. CERASTOSTOMEÆ. Perithecia for the most part immersed, or sometimes subsuperficial, rostrate.

GEN. 1. **CERASTOSTOMELLA.** Perithecia rather carbonaceous. Sporidia hyaline.

* **ROSTRATELLA.** *Sporidia subovoid.*

- C. rostrata*, Fr., *Sacc. Syll.* 1546.
On rotten wood. Milton, Norths.
- C. cirrhosa*, P., *Sacc. Syll.* 1547; *Hdbk.* 2625.
On rotten wood. Cotterstock, Lynn, Forden.
- C. ampullascea*, Cke., *Sacc. Syll.* 1549; *Hdbk.* 2628.
On rotten oak. Shere.
- C. vestita*, S., *Sacc. Syll.* 1550.
On hard decorticated wood. Shere.
- C. Stevensoni*, B. & Br., *Sacc. Syll.* 1562.
On rotten wood. Glamis, N.B.

** **LENTOMITA.** *Sporidia uniseptate.*

- C. ligneola*, B. & Br., *Sacc. Syll.* 2285; *Hdbk.* 2627.
On decayed oak. Somerset, Sydenham, Shrewsbury.
- C. stylophora*, B. & Br., *Sacc. Syll.* 2286; *Hdbk.* 2630.
On bark of sycamore. Mossburnford, Shere.

*** **CERATOSPHERIA.** *Sporidia multiseptate.*

- C. lampadophora*, B. & Br., *Sacc. Syll.* 3681; *Hdbk.* 2629.
On decayed wood. Coombe Hay, Bath.
- C. crinigera*, Cke., *Sacc. Syll.* 3682.
On decorticated pine wood. Lynn.

**** OPHIOCERAS.** *Sporidia filiform, septate.*

C. bacillata, *Oke.*, *Sacc. Syll.* 4111; *Hdbk.* 2636.

On decorticated rotten sticks. Shere.

GEN. 2. CERATOSTOMA, Fr. Perithecia rather carbonaceous, sporidia coloured.

C. piliferum, *Fr.*, *Sacc. Syll.* 786; *Hdbk.* 2626. (= *dryina*, *Pers.*).

On pine wood.

GEN. 3. GNOMONIA. Perithecia submembranaceous, erumpent, ostiolum rostellate; sporidia hyaline.

*** GNOMONIELLA.** *Sporidia continuous.*

G. tubiformis, *Tode*, *Sacc. Syll.* 1567; *Hdbk.* 2738.

On dead leaves (alder, hornbeam, &c.). N. Wootton, Shrewsbury, Spye Park, Wilts.

G. avellanæ, *Sch.*, *Sacc. Syll.* 1569; *Hdbk.* 2737.

On dead hazel leaves. King's Cliffe, Darenth, Scarborough.

G. vulgaris, *Ces.*, *Sacc. Syll.* 1578; *Hdbk.* 2739.

On hazel leaves. King's Cliffe, King's Lynn, Thirsk, Scarborough, Darenth, Bristol.

G. devexa, *Desm.*, *Sacc. Syll.* 1583.

On *Polygonum persicaria*. Lynn.

**** MAMIANA.** *Perithecia seated on a stroma.*

G. fimbriata, *Pers.*, *Sacc. Syll.* 1589; *Hdbk.* 2735.

On leaves of hornbeam. Common.

G. coryli, *Batsch*, *Sacc. Syll.* 1590; *Hdbk.* 2736.

On living leaves of hazel. Darenth, Bexley (Kent); King's Cliffe, Suffolk, Castle Howard (Yorks).

**** CLOSTERIGNOMONIA.** *Sporidia fusoid, uniseptate.*

G. setacea, *Pers.*, *Sacc. Syll.* 2204; *Hdbk.* 2740 (in part).

On the petioles, veins, and leaves of various trees, especially *Acer pseudoplatanus*. Wothorpe (Norths.), Hampstead, Neatishead, Darenth, Shere, Lynn, Scarborough.

G. inclinata, *Desm.*, *Sacc. Syll.* 2206; *Hdbk.* 2740 (in part).

On dead leaves of *Acer campestre*. Highgate.

G. suspecta, *Fckl.*, *Sacc. Syll.* 2212.

On dead leaves of oak and beech. Shere.

G. campylostoma, *Auers.*, *Sacc. Syll.* 2219.

On birch leaves. Carlisle.

G. petiolicola, *Fckl.*, *Sacc. Syll.* 2222.

On petioles of sycamore leaves. Highgate, Crystal Palace.

G. graphis, *Fckl., Sacc. Syll.* 2225.

On dead leaves of *Rubus fruticosus*. Lynn, Nesseliffe.

*** SPECIES DUBLÆ.

G. curvirostra, *Sow., Sacc. Syll.* 2238 ; *Hdbk.* 2724.

On stem of umbellifer.

G. ariae, *Fckl., F. Rhen., Sacc. Syll.* 877 ; *Hdbk.* 2741.

On leaves of *Pyrus aria*. Darenth.

SOME EXOTIC FUNGI.

By M. C. COOKE.

***Lenzites sinensis*, Cooke.**

Pileo suberoso-coriaceo, plano (1-2 in.), basi gibbo, glabro, zonato, radiatim rugoso, submargine umbrino, postice saturate purpureo-brunneo, margine acuto, contextu lignicolori ; lamellis tenuibus, rigidis, dichotomis, acie demum laceratis, sordidis dein umbrinis. Sporis $6 \times 3\frac{1}{2} \mu$.

On logs. China, Prov. Hupeh. (*Dr. A. Henry*, No. 7926).

Somewhat allied to *L. eximia*, B., but quite distinct and characteristic.

***Ditiola phyllogena*, Cke. & Mass.**

Stipitata, ad basim confluens, albo-floccosa, cupula planiuscula, disco late aureo. Sporis fusiformibus, uniseptatis, demum triseptatis, hyalinis, $12-13 \times 4-5 \mu$.

On coriaceous leaves. Castle Bruce. Dominica. (*G. A. Ramage*.)

***Geaster argenteus*, Cooke.**

Exoperidio 8-10 fido ($1\frac{1}{2}$ unc. diam.), laciniis anguste lanceolatis, apice passim bifidis, tenuis, siccitate arcte involutis, extus albidonitidis, intus fuligineo-umbrinis ; endoperidio globoso ($\frac{3}{8}$ unc.), sessili, glabro, pallido ; peristomio dentato-lacerato capillitio delicatulo, hyalino, $4-6 \mu$ diam. Sporis globosis, glabris, pallide fuscis, pellucidis, 4μ diam.

In Saskatchewan. (N.W. Amer. Expl. Exp.)

Allied to *G. floriformis*.

***Phoma corvina*, Ravenal, No. 588.**

Peritheciis globoso-depressis, sub-cutaneo erumpentibus, atris, laxe gregariis, vix papillatis. Sporulis minutis, ellipticis, continuis, hyalinis, $3 \times 1 \mu$. *Sphæria corvina*. Ravenal MSS.

On branches of *Gossypium*. S. Carolina. (*Ravenal*.)

***Phoma globigera*, Cke. & Mass.**

Peritheciis gregariis, numerosis, punctiformibus, atris, sursum nudis, convexis ; sporulis globosis, continuis, hyalinis, $5-6 \mu$ diam.

On twigs of *Vitis vinifera*. (*Mende*.)

Cladosporium epibryum, *Cke. & Mass.*

Cæspitulis minutissimis, atris. Hyphis simplicibus, brevibus, flexuosis, septatis, olivaceis, superne pallidioribus; conidiis ellipticis, utrinque rotundatis, uniseptatis, medio constrictis, pallide fuscis, hyalinis, $18-20 \times 10-12 \mu$.

On capsules of various mosses. United States. (*Mrs. E. G. Britton.*)

Pleospora muscicola, *Cke. & Mass.*

Peritheciis sphaeroideis, basi applanatis, breve papillatis, nigris, subnitidis, laevibus. Ascis clavatis, octosporis, brevissime stipitatis; sporidiis distichis, ellipsoideis, utrinque rotundatis, medio constrictis, $5-7$ septato-muralibus, saturate fuliginis, $30-35 \times 12-15 \mu$.

On *Bryum pendulum*. Dumb-bell Bay, 82° N. (*Capt. Fielder.*)

The upper half of the sporidium is broader than the lower in the majority of cases. The colour is sometimes so dark as to be almost opaque.

ON ERYSIPHE POLYCHÆTA, *B. & C.*, AND UNCINULA POLYCHÆTA, *B. & C.*

The above species, although first described only a dozen years ago, have, owing to various reasons, been plunged into a state of uncertainty quite on a par with the microscopic species of old authors. Both species are described by Berkeley, as quoted below, in "*Grevillea*," Vol. iv., p. 159 (1876), each being followed by a fuller description drawn up from the *type specimen*.

"*Erysiphe polychæta*, *B. & C.*—Maculis orbicularibus; appendicibus brevibus plurimus rectis; ascis elongatis clavatis. On leaves of *Celtis*. Alabama. Peters, No. 3876. Spots orbicular, yellow-brown in the centre, from the young perithecia; appendages about equal to their diameter, straight; asci elongated, clavate." —"*Grev.*," Vol. iv., p. 159.

Hypophyllous, spots dense, whitish, perithecia generally numerous, brownish, becoming black, subdepressed, $250-300 \mu$ diam., appendages numerous, 200 or more, colourless, simple, when young perfectly straight, when fully developed more or less involute at the tips, which are attenuated at all stages; asci about 50, subcylindrical and abruptly attenuated at the base into a slender pedicel, constantly bisporous; spores smooth, colourless, simple, cylindrico-ellipsoid, $26-30 \times 11-14 \mu$. (Type in Herb. Berk., Kew, No. 10543.)

It will be seen from the above full description that Berkeley had drawn up his diagnosis from a young perithecium having the appendages yet straight.

"*Uncinula polychæta*, B. & C.—Peritheciis sparsis; appendicibus multis. On leaves of *Celtis occidentalis*. Car., No. 5619. Perithecia scattered; appendages about 28, $1\frac{1}{2}$ longer than the diameter of the perithecia, hyaline."—"Grev.," Vol. iv., p. 159.

Hypophyllous, mycelium very scanty, not forming spots; perithecia scattered, usually not more than two or three on a leaf, 150-200 μ diam., appendages 25-28, simple, colourless, very slender, about $300 \times 2\text{-}3 \mu$. Apices strongly involute, not at all incrassated; asci about 25, cylindrico-clavate, tetrasporous; spores colourless, simple, elliptic-oblong, $20 \times 10 \mu$. (Type in Herb. Berk., Kew, No. 10588.)

The fact of both species being met with on leaves of *Celtis* and both having the same specific name has apparently led to the idea that the two species are identical, and the difficulty is not lessened by the species described as *Erysiphe polychæta*, B. and C., being issued in Ravenel's Fung. Car. Exs. iv., No. 68, as *Uncinula polychæta*, B. & C., which appears, and with reason, to have been accepted as the species described by Berkeley under the last name, which is not the case. In "*Michelia*," ii., p. 373, Saccardo established a new genus, *Pleochæta*, from specimens collected by Spegazzini at Buenos Ayres, and described by the latter as *Uncinula Lynckii*, Speg., Fung. Arg. Pug. ii., p. 17. These specimens were considered to be identical with the *Uncinula polychæta*, B. & C., as published by Berkeley, *Erysiphe polychæta*, B. & C., being given as a synonym, and the whole included under the name of *Pleochæta Curtisii*, Sacc. and Speg. The genus *Pleochæta* is kept up by Saccardo in the "*Sylloge*," Vol. i., p. 9, with the following remarks after the generic diagnosis:—"Setis creberrimis, rectis, contextu perithecii subcoriaceo, ascis teretiusculis, etc., ab *Erysiphe* et *Uncinula* dignoscitur." In the "*Journal of Mycology*," 1886, p. 43, Ellis shows that Spegazzini's South American specimens are identical with *Uncinula polychæta*, B. & C., of Ravenel's Fung. Carol. Exs. iv., No. 68 (= *Erysiphe polychæta*, B. & C., "Grev.," Vol. iv., p. 159). Ellis endeavoured to reconcile the specimens in Ravenel's Exs. quoted above with the description of *Uncinula polychæta*, B. & C., as follows:—"Possibly the statement that the number of appendages is 'about 28' is a typographical error for 'about 228,' which would be nearer the actual number."

In his *Additamenta* to the first four volumes of the "*Sylloge*," Saccardo adds considerably to the confusion by still keeping up the genus *Pleochæta*, and giving a revised diagnosis of *P. Curtisii*, Sacc. and Speg., the only species in the genus, which is a translation of the one given by Ellis in the "*Journal of Mycology*," as quoted above, and is as follows:—"Appendicibus numerosis circ. 200, hyalinis, continuis, apice attenuatis, et incurvatis ornata." It is generally admitted that in the group of Fungi under consideration the perithecial appendages constitute an important factor in

the discrimination of genera. Nevertheless, as pointed out by Cooke in "Grevillea," Vol. xi., p. 35, we have, in the present instance, a genus established by Saccardo, the leading character of which consists in the *straight* appendages. The genus includes a single species, the appendages of which are described as *incurved*. It may safely be accepted that there is no such genus as *Pleochæta* in nature, *Pleochæta Curtisii*, Sacc. and Speg., being a true *Uncinula*. Finally, S. M. Tracy and B. T. Galloway, in the "Botanical Gazette," Vol. xiii., p. 29, in an article headed "*Uncinula polychæta*, B. & C.," say:—"Although this species has been known for more than ten years it is believed that an attempt to reconcile the differences in published descriptions, with the addition of such facts as have been noted in a recent examination of fresh specimens collected on Sand Creek, five miles east of Starkville, Miss., will be of interest to mycologists." The specimens collected five miles east of Starkville by the last-mentioned authors agree in many points with *Erysiphe polychæta*, B. & C., and may possibly be the same species, but the authors' idea of reconciliation with *Uncinula polychæta*, B. & C. (not "*Uncinula pleochæta*"), is on a par with that of Ellis, and is as follows:—"Berkeley & Curtis," "about 28" probably being a misprint for "about 280." It is curious to note that in every instance where an *Uncinula* has been met with on *Celtis* it has been considered as the *U. polychæta* of B. & C., and that any discrepancy between the characters presented and Berkeley's brief description was due to the author's inaccuracy, whereas in reality there are two species of *Uncinula* on the same species of *Celtis*, the synonymy of which are as follows:—

1. *Uncinula polychæta* (B. & C.), Massee (= *Erysiphe polychæta*, [B. & C.], Grev., Vol. iv., p. 159; *Pleochæta Curtisii*, Sacc. & Speg., Fung. Arg. Pug. ii., p. 44; Sacc. Syll., Vol. i., No. 32; Sacc. Addit., No. 32 (in part). *Uncinula polychæta*, Rav. Fung. Carol. Exs., fasc. 4, No. 68.

2. *Uncinula confusa*, Massee (= *Uncinula polychæta*, B. & C.), Grev., Vol. iv., p. 159; *Pleochæta Curtisii*, Sacc. and Speg., Fung. Arg. Pug. ii., p. 44; Sacc. Syll., Vol. i., No. 32; Sacc. Addit. Syll., No. 32 (in part).

As *Erysiphe polychæta*, B. & C., has been shown to be a true *Uncinula* and is the commonest species, in addition to being already known as *Uncinula polychæta*, the original specific name has been retained. As to priority, it is not a matter of dates, but only to standing higher on the same page than *Uncinula polychæta*, B. & C., the specific name of which has been changed as above.

GEORGE MASSEE.

NEW BRITISH FUNGI.

By M. C. COOKE.

(Continued from p. 56.)

Puccinia Schrøteri, Pass. Sacc. Syll. VII., 2579.

On living leaves, &c., of jonquil. C. W. Dod, Esq., Edge Hall, Malpas.

Conisphæria (Melanopsamma) borealis, Karst., var. **minor**.Perithecia scattered or gregarious, very small, innate at the base, convex above, black, smooth, slightly papillate. Asci cylindrical; sporidia uniseriate, narrowly ellipsoid, 2 guttulate, then faintly uniseptate, hyaline, $6 \times 2\frac{1}{2} \mu$.

On rotten wood. Shere. (Dr. Capron.)

Ceratostomella vestita, Sacc. Syll. 1550.Perithecia scattered, subsuperficial, globose, loosely clad with intertwined flexuous septate hairs, naked about the cylindrical ostiolum, which is about equal in length to the diameter of the perithecium, and rugose at the apex. Asci cylindrical, shortly stipitate. Sporidia uniseriate, ellipsoid ($6.8 \times 4 \mu$) continuous, biguttulate, hyaline.

On rotten wood. Shere. (Dr. Capron.)

Pleospora Meliloti, Rabh., Sacc. Syll. 3727.var. **Medicaginis**, Cke. & Mass.Sporidia muriform, 5 septate, muriform brown, $40 \times 15 \mu$.On stems of *Medicago sativa*. Kew.**Pleospora herbarum**, Pers., Sacc. Syll. 3730.var. **Cichorii**, Cke. & Mass.Sporidia 7 septate, muriform, about $40-43 \times 14-16 \mu$, pale olive.On stems of *Cichorium intybus*. Kew.**Phoma cyclospora**, Sacc. Syll. 837.On *Euphorbia salicifolia*. Kew.**Phoma Barringtoniæ**, Cke. & Mass.Epiphyllous, on large irregular glaucous spots. Perithecia convex, papillate, subgregarious, black, covered with the thin shining cuticle. Sporules fusoid-elliptic, with a nucleus at each end, continuous, hyaline, $13-15 \times 4-5 \mu$.On living leaves of *Barringtonia speciosa*. Kew.**Diplodina glaucii**, Cke. & Mass.Perithecia minute, scattered, globose, black, covered by the epidermis, which is at length pierced by the papillate ostiolum. Sporules elliptical, obtuse, scarcely constricted, uniseptate, hyaline, $12-13 \times 3 \mu$.On dead stems of *Glaucium fulvum*. Kew.

Mycogone alba, *Letell Champ. t. 667, f. 2.*

This mould, which spreads over the whole surface of cultivated mushrooms, is a true *Mycogone*, the conidia of which closely resemble those of *M. rosea*. There is no rosy tint, and it may possibly be referred to Letellier's species, of which there is no description, and the figure is very unsatisfactory. Doubtless an imperfect (conidial) condition of some undescribed *Hypomyces*.

On mushrooms. Wynyard, Stockton-on-Tees. (*H. E. Gribble.*)

Glilocladium agaricinum, *Cke. & Mass.*

Causing the pileus of mushrooms to crack into large frustular scales. Tufts hemispherical, sometimes confluent, pallid, growing white, at first gelatinous. Hyphæ creeping, branched, fertile branches erect, ultimate branchlets verticillate, quaternate, capitulum of conidia subglobose, white. Conidia at first glutinous, subglobose, hyaline, 5-6 μ diam.

On cultivated mushrooms. Leicester.

Bispora pusilla, *Sacc. Syll. VII., No. 1633.*

On chips. Kew.

Tubercularia minor, *Link, forma Syringæ, C. & M.*

Minute, erumpent, horn-coloured, then flesh colour or reddish, shining, gelatinous when moist, stroma readily falling away, when mature, leaving cup-like pits; conidia oblong, straight, rounded at the ends, $10 \times 2 \mu$. Sporophores simple.

On twigs of lilac. Kew.

Pionnotes Biasolettianum, *Corda Sc. II., f. 14.*

Polymorphous or effused, between fleshy and tremelloid, thick, orange. Stroma fleshy, whitish, floccose; hyphæ septate, simple or sparingly branched, fasciculate, stratum of conidia rather thick, gelatinous, orange-red, viscid; conidia fusiform, acuminate at each end, slightly curved, granular within, then obsoletely 2-5 septate, $60-70 \times 4-5 \mu$.

On wild rose stems. Reading. (*Dr. Carlyle.*)

BRAITHWAITE'S BRITISH MOSS FLORA.

We are very glad to see the first part of the second volume of this invaluable work. Part XI. contains the first part of Grimmiaceæ, and is fully up to all that have preceded it in excellence. The plates, which have now reached to Pl. LIII., are excellent. If we feel any regret—and we cannot help feeling it in common with bryologists—it is that the publication does not proceed more rapidly. On this point we have been assured that no effort has been wanting to secure greater expedition, and that these efforts will not be relaxed. We, who are growing old, sometimes fear that, in the natural course of things, we shall scarcely live to see the end; let us hope that we shall be disappointed.

TWO AUSTRALIAN FUNGI.

BY M. C. COOKE.

The following specimens communicated by Baron F. von Mueller.

* **Asterina (Asterella) subcuticulosa**, Cooke.

Epiphylla. Peritheciis pelliculosis, applanatis, irregularibus, vel confluentibus, absque mycelio, atris, sub lente fuscis. Ascis pyriformibus. Sporidiis elliptico-clavatis, uniseptatis, hyalinis, cellulo superiori latiore (circa $10-12 \times 4 \mu$).

On fading and dead leaves of *Olearia argophylla*. Gippsland. (Luehmann.)

* **Xylaria (Xyloglossa) agariciformis**, Cke. & Mass.

Capitulum semiglobose (8 mm. to 1 cm. diam.), glaucous, dotted with the black punctiform ostiola, truncate, or depressed, beneath black and sterile, so as to leave a barren black ring round the stem. Stem equal, or a little attenuated downwards, 2-3 mm. thick, 1 inch or more long, straight or flexuous, fuliginous. Asci cylindrical. Sporidia uniseriate, elliptical, rounded, or a little attenuated at the ends, at first binucleate, then opaque and dark brown, $23-25 \times 6-8 \mu$.

On stumps. Eyre's Sandpatch. Great Bight. (J. D. Baff.)

HEREFORDSHIRE FLORA.*

After being in the printer's hands for about two years this Flora has at last made its appearance. How we pity the poor Editors and Authors who are at the mercy of local printers. A worthy scene for Dante's "Inferno." Nevertheless, it is welcome at last; whether improved by its vicissitudes it is hardly possible to say. Poor Dr. Bull! Had he been alive to pass through this last experience we fear it would have disturbed his equanimity, if it had not hastened his end. "At Last" was Charles Kingsley's last book, and at last Dr. Bull's long-cherished hope of a Herefordshire Flora is now accomplished. It is a big volume, and a neat one, of which the Woolhope Naturalists' Field Club need not to feel ashamed, for this Club is responsible for the cost of its production.

A volume of 550 pages, and a map, represents a considerable amount of voluntary labour, and the two clergymen whose names appear on the title page accept responsibility for the contents. After the preface comes a long "Definition of the Botanical Districts of Herefordshire," by the Rev. W. H. Purchas, with "Notes on their Geology," by the Rev. W. S. Symonds. Then follows the

* "Flora of Herefordshire." Edited by W. H. Purchas and Augustin Ley. One Vol., 8vo., cloth. Hereford: Jakeman and Carver (for the Woolhope Naturalists' Field Club). 1889.

Flora, with 367 pages devoted to the Phanerogamia, then 75 pages of mosses, 70 pages of catalogue of the Fungi, and some few pages of supplementary matter, and the Indices.

It is neither our province, nor our intention, to express any opinion on the portion devoted to the Phanerogamia, in which 903 species are recorded, inclusive of the Ferns. The mosses, to the number of 283 species, doubtless came under the fatherly care of the Rev. Augustin Ley, and there is little room for doubt that this portion of the work is thoroughly trustworthy. The Fungi, rather a speciality with the Woolhope Club, attain to some 1,097 species, contrasting favourably with the 445 species recorded in the "Flora of Leicestershire" (1886), and the 987 of the "Flora of West Yorkshire" (1888). In this portion the Hymenomycetes were catalogued by M. C. Cooke, from lists and drawings left by the late Dr. Bull, and from notes and drawings made by himself during the period of the various annual forays. The list of Discomycetes was furnished by W. Phillips, F.L.S., whilst C. B. Plowright lent his ready assistance with the Uredines and the Pyrenomycetes. Only one of these sections makes any reasonable approach to completeness, viz., that of the Hymenomycetes. The minute fungi have been only casually recorded, and nothing like a systematic attempt has ever been made to investigate the microscopic fungi of Herefordshire; consequently, with the exception of the Discomycetes, the lists are most imperfect and incomplete. At the annual forays and exhibitions all the interest has centred in the larger fungi, and this portion may be taken to represent fairly well what has been found and recorded in the county. It may be of interest to compare the number of species of the Hymenomycetes recorded for Herefordshire, namely, 636, with the 499 species recorded for the same order in the "Flora of West Yorkshire," and 299 recorded in the "Flora of Leicestershire." These numbers cannot be compared with those of Epping and Essex generally, since the Essex lists are so far behindhand in publication, notwithstanding that the Field Club has a monthly journal of its own. We fancy it may be taken for granted that Herefordshire stands at the head of all English Counties in the number of species of Agarics which have been found within its borders. It is not surprising that some of these should still remain so identified with the county that they have not been observed elsewhere in the British Isles. Such, for instance, as *Lactarius lilacinus*, found at Sunny Gutter, on one occasion rather freely; *Hygrophorus erubescens*, from Downton; *Cortinarius triumphans*, from Dinmore; *Agaricus (Pholiota) Cookei*, described by Fries from specimens collected at Dinmore; *Agaricus (Inocybe) hamactus*, B. & C., only found, as yet, at Credinhill; *Agaricus (Naucoria) rubricatus*, Berk., known only from Holme Lacy; *Agaricus (Hypholoma) cedipus*, C., discovered at Clehanger; not forgetting *Agaricus (Pholiota) aureus* var. *Herefordiensis*; and last, but not least, the redoubtable *Strobilomyces strobiliaceus*, so often found within the county.

Presumably it was inevitable that more instances than agreeable should be met with of literal errors in the printing of specific names, notwithstanding the care exercised with a view to preventing it. There are some letters which the ordinary compositor seems to delight in turning the wrong side up, and this persistency is observable here and there.

Taken as a whole, we presume that the present Flora will be accepted as generally satisfactory, notwithstanding the absence of any records of the *Hepaticæ*, Lichens, and the Fresh Water Algæ, the former being particularly remarkable, as they are often collected and studied by bryologists. In the preface these omissions are alluded to in the following terms:—"It is with much regret that we have to omit all account of the Hepaticæ in this Flora. '*Ars longa*,' and though some considerable material has been gathered towards an account of the Herefordshire Hepaticæ, chiefly by the labours of Mr. B. M. Watkins, yet the whole subject remains as yet too incomplete to justify publication. We do not know, beyond the work done as mentioned above by Mr. Lees in the Malvern District, anything has yet been attempted in the County of Hereford as regards Lichens or Algæ."

The general appearance of the work is good, the type clean and clear, and the arrangement suitable for ready reference. We may have seen better paper employed, even for a County Flora, but that is a matter of detail. Certainly it is to be hoped that the Woolhope Club will not be pecuniary sufferers by this praiseworthy effort, and that it will soon be reimbursed the whole outlay in the production of this volume.

CHAMPIGNONS DE LA FRANCE.

We approach a somewhat unwelcome task in noticing, rather critically, the later Plates issued by Capt. Lucand, in his large quarto "*Figures peintes de Champignons de la France*," which, as we have before observed, are intended as a continuation of the celebrated Plates of "*Bulliard's Champignons de la France*." The present work has now reached its eleventh part and the 275th Plate, and costs no less than £16 10s. Od., which is double the published price of the 292 Plates given in the first two volumes of another work on "*The Fungi of Britain*," published in this country. Although the paper is larger in the French work, the *paper* is all that is furnished for the extra money. Undoubtedly there is no advantage given in artistic execution, nor do we think in scientific accuracy, but on these points our opinion may be supposed to be a prejudiced one.

Let us, however, confine ourselves to the 25 Plates included in this present Part XI., commencing with Plate 251, *Lepiota naucina*, Fries. Beneath this Plate there are synonyms given, or presumed synonyms, which are rather extraordinary, and

somewhat shock our insular prejudices. "*Agaricus pudicus*, Bull., t. 597; *Pholiota*, of Fries; *Ag. Schulzeri*, Kalchb., t. 2, f. 2."

As to the identity of *Ag. Schulzeri*, Kalchb., with *Ag. naucinus*, Fries, we will not presume to decide, as we have never seen *Ag. Schulzeri*; but, supposing it to be true that this species has ovate spores, whilst *Ag. naucinus* has globose spores, then the identity must be open to question. Far more widely distinct must be *Ag. pudicus*, Bull., and *Ag. naucinus*, Fr. Most mycologists, except the gallant Captain, recognize some points of difference between the elliptical brown spores of *Ag. (Pholiota) pudicus*, and the globose white spores of *Ag. (Lepiota) naucinus*. It comes as quite a revelation that the synonyms of some of the *Leucospori* must be sought amongst the *Dermini*. This is cutting down "spore-classification" with a vengeance. Adverting to the figures, given on Plate 251, it is rather singular that the longitudinal section exhibits the stem as *solid*, whilst the transverse section shows it *hollow*. Are both equally accurate?

The next Plate, 252, is devoted to *Tricholoma paneolum*, Fries, whilst the romantic letter-press indicates as synonyms *Ag. nimbatum*, Batsch., f. 65, and *Tricholoma ectypum*, Gillet, p. 124, and of Secretan, but *not* the *Agaricus ectypus*, Fries, which should have been made clear. May it not be taken for granted that it is prudent to ignore such synonymy altogether, and just accept the Plates for what they are worth?

Russula depallens, on Plate 261, is not exactly the sort of *Russula depallens* that we have been accustomed to see. We like to note the distinctly rugose grey stem, which seems so persistent in nature, but requires a very strong lens to detect in the figures. Nevertheless "variety is charming."

Of all the hallucinations with which many of the French mycologists seem to be infected, there is no one so persistent as that figured on Plate 272 as *Cortinarius torvus*, Fries. Surely the figures given by Fries, in his *Icones* (t. 157, Fig. 1), should have convinced Dr. Quelet that his notion of *Cortinarius torvus* is no longer tenable. Yet the same ghost arises from the grave in this Plate, figured from specimens communicated by Quelet. The Rev. M. J. Berkeley long ago declared the French drawings of this species (those by Quelet, Bondier, and others) to be none other than his own, *C. anfractus*, which was *not* the *C. anfractus*, Fries, and has been figured in Cooke's *Illustrations*, Plate 707, under the name of *Cortinarius Berkeleyi*. It seems to be an absurd manifestation of obstinacy to persist in calling a species by a name with which it has no immediate affinity, and to which it is not entitled. If for nothing else, the dark-coloured flesh of *Cort. torvus*, as exhibited in Fries' own figures, should raise a suspicion of this impostor, with white flesh, to say nothing of the volvate patches on the pileus. Whatever else it may be, no mycologist in his senses could contend that Plate 272 represents the *Cortinarius torvus*, of Fries.

Generally, as applied to all the Plates, we should like to discover the value of a series of symmetrically arranged little bodies, which may be supposed to represent spores, but which, if drawn to any scale at all, the scale is not revealed, and very seldom is any intimation given of their dimensions.

It is much to be regretted that our author did not from the first obtain the assistance of a good practical man in the art of delineation, to have advised with him, and assisted him in his work. There is no doubt that a large amount of labour and experience has not been turned to the best account, and that a little advice might have converted a very mediocre into a very excellent work. It requires but a very little elementary knowledge of illustrative art to recognize the failings in these Plates, and at the same time to marvel that the little artistic help was not obtained which would have spared the credit of the author, and augmented the sale of his work, which, in all conscience, is expensive enough for a much better book.

SYNOPSIS PYRENOMYCETUM.

(Continued from p. 52.)

Fam. 13. **ENDOXYLEÆ** (IMMERSE, *Fr.*). Perithecia immersa, latentia, simplicia, collo brevi erumpente.

GEN. 1. ENDOXYLA, *Fekl.* Stroma obsoletum ligneum, sporidia allantoidæa, dilute fusca.

3918. parallela, *Fr.* ... 672 3920. macrostoma, *Fekl.* 674
3919. operculata, *A. & S.* 673 3921. populi, *Rom.* ... 6284

GEN. 2. XYLOSPHÆRIA, *Cooke Grev.* VII., 86. Perithecia innata, immersa, lignicola. Sporidia subelliptica, continua, vel septata, fusca.

* **ANTHOSTOMA.** *Sporidia continua, fusca.*

3922. melanotes, <i>B. & Br.</i> 1097	3932. polynesia, <i>B. & C.</i> 1110
= <i>Schmidtii</i> , <i>Nke.</i>	3933. chronostomum, <i>Sp.</i> 6329
<i>var. longiascum</i> , <i>Berl.</i>	3934. carbonescens, <i>Nke.</i> 1111
3923. endoxyloides, <i>Mont.</i> 7436	3935. anceps, <i>S. & R.</i> ... 1115
3924. tomentosum, <i>Ehr.</i> 1098	3936. tuberculosa, <i>Schw.</i> 4368
3925. ferrugineum, <i>Nke.</i> 1099	3937. defossum, <i>D. R. & M.</i> 1117
3926. venetum, <i>Sacc.</i> ... 1100	3938. cubiculare, <i>Fr.</i> ... 1118
3927. urophorum, <i>S. & S.</i> 1101	3939. ostropoides, <i>Rehm.</i> 1131
3928. areolatum, <i>Nke.</i> ... 1103	3940. syciospermum, <i>D. R.</i>
3929. inquinans, <i>Nke.</i> ... 1106	<i>& M.</i> ... 1119
3930. italicum, <i>S. & S.</i> ... 1107	3941. sustentum, <i>Plov.</i> 1120
3931. intermedium, <i>Nke.</i> 1108	3942. gigaspora, <i>Cke. & Hk.</i> 6531

** EUMASSARIA *Sporidia 2-pluriseptata, fusca.*

4000. *foedans*, Fr. ... 2852 4019. *atroinquinans*, B. & C. ... 2870
 = *amblyospora*, B. & Br. 4020. *rhyponia*, M. ... 2871
 4001. *loricata*, Tul. ... 2853 4021. *semitecta*, B. & C. ... 2872
 4002. *æsculi*, Tul. ... 2854 4022. *Antoniae*, Fab. ... 2873
 4003. *pupula*, Fr. ... 2855 4023. *stipata*, Fekl. ... 2874
 4004. *pyxidata*, Reiss. ... 2856 4024. *alpina*, S. & S. ... 2875
 4005. *urceolata*, Wallr. ... 2857 4025. *marginata*, Fekl. ... 2876
 4006. *pyri*, Oth. ... 2858 4026. *Fuckelii*, Ntke. ... 2877
 4007. *corni*, Fr. & M. ... 2859 4027. *vomitorea*, B. & C. ... 2878
 4008. *gigaspora*, Fekl. ... 2860 4028. *hirta*, Fr. ... 2879
 4009. *inquinans*, Tode. ... 2861 4029. *macrospora*, Desm. ... 2880
 4010. *callispora*, Sacc. ... 2862 4030. *Hoffmanni*, Fr. ... 2881
 4011. *ulmi*, Fekl. ... 2863 4031. *pulchra*, Hark. ... 6644
 4012. *fagi*, Fekl. ... 2864 4032. *distincta* (Schwz.), Cke. ... 4359
 4013. *micacea*, Kunze. ... 6646 4033. *olivacea* (S.), Cke. ... 4353
 4014. *epileuca*, B. & C. ... 2865 = *olivaceo-hirta*, Schwz.
 4015. *platani*, Ces. ... 2866 4034. *occulta*, Rom. ... 6642
 4016. *carpinicola*, Tul. ... 2867 4035. *cleistotheca*, Hark. ... 6643
 4017. *argus*, B. & Br. ... 2868 4036. *umbrosa*, Niessl. ... 6645
 4018. *Niessleana*, Rehm. ... 2869

Species dubie.

4037. *Gerardi*, Cke. ... 2882 4041. *succincta*, Wallr. ... 2886
 4038. *squalens*, Fr. ... 2883 4042. *maculata*, Wallr. ... 2887
 4039. *crypta*, Fr. ... 2884 4043. *conspurecata*, Wallr. ... 2888
 4040. *protusa*, Fr. ... 2885 4044. *circumscissa*, P. ... 2889

*** MASSARINA. *Sporidia bi-v. pluriseptata hyalina.*

4045. *eburnea*, Tul. ... 3390 4050. *corni*, Fekl. ... 3395
 var. salicis, Karst. ... 1017 4051. *rubi*, Fekl. ... 3396
 4046. *eburnoides*, Sacc. ... 3391 4052. *lunulata*, Tul. ... 3397
 4047. *tiliæ*, Ph. & Pl. ... 3392 4053. *polymorpha*, Rehm. ... 3398
 4048. *microcarpa*, Fekl. ... 3393 4054. *Marcucciana*, Awd. ... 3399
 4049. *coryli*, Karst. ... 3394 4055. *penicillata*, Sacc. ... 3400

*** PLEOMASSARIA. *Sporidia muriformia.*† Genuina. *Sporidia muco involuta.*

4056. *siparia*, B. & Br. ... 3708 4058. *carpini*, Fekl. ... 3710
 4057. *holoschista*, B. & Br. ... 3709

†† Karstenuia. *Sporidia muco destituta.*

4059. *rhodostoma*, A. & S. ... 3711 4061. *dumorum*, Mont. ... 7498
 4060. *varians*, Hatz. ... 3712

GEN. 2. **ENCHNOA**, Fr. *Perithecia pilosa*; *muco destituta*.
Sporidia botuliformia, hyalina v. olivacea.

4062. *infernalis*, Kze. & Fr. ... 372 4065. *Friesii*, Fekl. ... 375
 4063. *floccosa*, Karst. ... 373 4066. *alniella*, Karst. ... 376
 4064. *lanata*, Fr. ... 374

GEN. 3. **CRYPTOSPHERIA**, *Grev.* Perithecia densiuscule gregaria.

* *Sporidia allantoidea*.

- | | |
|---------------------------------------|---|
| 4067. millepunctata, <i>Grev.</i> 675 | 4073. rimulosa, <i>Pass.</i> ... 681 |
| = <i>pruinosa</i> , <i>Fr.</i> | 4074. ligniota, <i>Fr.</i> ... 682 |
| 4068. populina, <i>P.</i> ... 676 | 4075. rubrocincta, <i>Schw.</i> 683 |
| 4069. vicinula, <i>Nyl.</i> ... 677 | 4076. fissicola, <i>C. & E.</i> ... 684 |
| 4070. myriocarpa, <i>Nke.</i> 678 | 4077. vexata, <i>C. & E.</i> ... 685 |
| 4071. sepulta, <i>Nke.</i> ... 679 | 4078. inordinata, <i>B. & C.</i> 686 |
| 4072. ocellata, <i>Fr.</i> ... 680 | 4079. secreta, <i>C. & E.</i> ... 688 |

** CRYPTOSPHERELLA. *Myriospora, sporidia allantoidea*.

4080. Nitschkei, *Awd.* ... 689

GEN. 4. **PHYSALOSPORA**. Perithecia solidiuscula, sparsa, tecta.

* *Sporidia ovoidea v. oblonga, hyalina*.

- | | |
|--|---|
| 4081. corni, <i>Sacc.</i> ... 1659 | 4094. erratica, <i>C. & E.</i> ... 1696 |
| 4082. gregaria, <i>Sacc.</i> ... 1660 | 4095. subsolitaria, <i>Schw.</i> 1701 |
| 4083. uvæsarmenti, <i>Cke.</i> 6016 | 4096. eriostega, <i>C. & E.</i> 1702 |
| 4084. rosicola, <i>Fekl.</i> ... 1662 | 4097. entaxia, <i>C. & E.</i> ... 1703 |
| 4085. rhodina, <i>B. & C.</i> ... | 4098. crustulata, <i>Lev.</i> ... 1706 |
| 4086. pustulata, <i>Sacc.</i> ... 1663 | 4099. idæi, <i>Fekl.</i> ... 1710 |
| 4087. euganea, <i>Sacc.</i> ... 1665 | 4100. viscosa, <i>C. & E.</i> ... 1712 |
| 4088. pertecta, <i>Cke.</i> ... 1675 | 4101. thyoidea, <i>C. & E.</i> 1713 |
| 4089. citrispora, <i>B. & Br.</i> 1677 | 4102. ? microtheca, <i>C. & E.</i> 1714 |
| 4090. salicis, <i>Fekl.</i> ... 1678 | 4103. subsimplex, <i>Schw.</i> 1718 |
| 4091. cnpressi, <i>B. & C.</i> 1679 | 4104. callunæ, <i>Not.</i> ... 1721 |
| 4092. gelsemiata, <i>Cke.</i> ... 1680 | 4105. nigropunctata, <i>Rom.</i> |
| 4093. ceanothina, <i>Peck.</i> 1692 | <i>Bot. Not.</i> 1889. |

** UROSPORA. *Sporidia caudata*.

4106. cocciferæ, *Fab.* ... 1732

* * DITOPELLA. *Sporidia numerosa, oblonga v. fusoides*.

- | | |
|--|---|
| 4107. fusispora, <i>Not.</i> ... 1735 | 4110. Vizeana, <i>S. & Sp.</i> ... 1738 |
| 4108. cryptosphæria, <i>Fekl.</i> 1736 | 4111. Hosackiæ, <i>C. & H.</i> 1739 |
| 4109. fareta, <i>B. & Br.</i> ... 1737 | |

GEN. 5. **ENDOPHLÆA**, *Fr.* Corticola, sparsa, tecta. Sporidia uni-vel multiseptata.

* DIDYMELLA. *Sporidia subellipsoidea, uniseptata, hyalina*.

- | | |
|--|---------------------------------------|
| 4112. cladophila, <i>Nsl.</i> ... 2126 | 4118. vexata, <i>Sacc.</i> ... 2132 |
| 4113. genistæ, <i>Fekl.</i> ... 2127 | 4119. corni, <i>Sow.</i> ... 2133 |
| 4114. glomerulata, <i>Fekl.</i> 2128 | 4120. Barbieri, <i>West.</i> ... 2134 |
| 4115. mesnieriana, <i>Rehm.</i> 2129 | 4121. analepta, <i>Ach.</i> ... 2135 |
| 4116. applanata, <i>Nsl.</i> ... 2130 | 4122. Picconii, <i>Not.</i> ... 2136 |
| 4117. sphærellula, <i>Peck.</i> 2131 | 4123. lapponum, <i>Not.</i> ... 2137 |

4124. *purpurearum*, *Awd.* 2138 4134. *sepincolæformis*,
 4125. *nummularia*, *Bagn.* 2139 *Not.* ... 2150
 4126. *recedens*, *C. & H.* 2140 4135. *strobiligena*, *Desm.* 2152
 4127. *segna*, *C. & E.* ... 2141 4136. *fusispora*, *Duby. in Rabh.*
 4128. *castanella*, *C. & E.* 2142 *H. M.* 1132.
 4129. *celtidis*, *B. & C.* ... 2144 4137. *juniperina*, *Duby. in*
 4130. *cadubrina*, *Speg.* ... 2145 *Rabh. H. M.* 1833.
 4131. *cadubria*, *Sacc.* ... 2146 4138. *Rauii*, *Ell. & Ev., Bull.*
 4132. *diaporthoides*, *Sacc.* 2147 *Torr. B. Club*, x., 90.
 4133. *oleandri*, *D. R. & M.* 2149 4139. *uberina*, *Mont.* ... 2189

** CHOROSTATE. *Sporidia subfusoidea*, 1-septata, *hyalina*.

4140. *salicella*, *Fr.* ... 2413 4141. *sphingiophora*, *Oud.* 2414

* * METASPHERIA. *Sporidiis multiseptatis, hyalinis.*

† *Sporidia* 2-4 septata.

4142. *persistens*, *B. & Br.* 3430 4151. *socia*, *S.* ... 3438
 4143. *anisometra*, *C. & H.* 3431 4152. *sublanosa*, *Cke.* ... 3439
 4144. *leiotega*, *Ell.* ... 3432 4153. *Fiedleri*, *Nsl.* ... 3440
 4145. *rothomagensis*,
 Roum. ... 7018 4154. *depressa*, *Fckl.* ... 3441
 4146. *sepincola*, *Fr.* ... 3433 4155. *corticola*, *Fckl.* ... 3442
 4147. *pampinea*, *S.* ... 3434 4156. *cinerea*, *Fckl.* ... 3443
 4148. *peruviana*, *Cke.* ... 3435 4157. *apiculata*, *Wallr.* 3444
 4149. *Muggenburgi*, *S.* ... 3436 4158. *squamata*, *C. & E.* 3445
 4150. *chaetostoma*, *S.* ... 3437 4159. *Ashwelliana*, *Curr.* 3446
 4160. *plagarum*, *C. & H.* 7025

†† *Sporidia* 5-8 septata.

4161. *staphyлина*, *Peck.* 3447 4165. *brachytheca*, *B. & C.* 3451
 4162. *Cerletti*, *Sp.* ... 3448 4166. *scalaris*, *D. R. & M.* 3452
 4163. *subcutanea*, *C. & E.* 3449 4167. *vitis*, *Schulz.* ... 3638
 4164. *aulica*, *C. & E.* ... 3450

* * CERIOSPORA. *Sporidia fusoides*, 1-3 septata, *mucronata*.

4168. *Dubyi*, *Nsl.* ... 3519 4170. *bicalcarata*, *Ces.* ... 3523
 4169. *xantha*, *S.* ... 3520

* * * SACCARDOELLA. *Sporidia* 20-30 septata.

4171. *montellica*, *Sp.* ... 3537

GEN. 6. **OPHIOBOLUS.** *Corticolæ, tectæ. Sporidia filiformia.*

4172. *fruticum*, *R. & D.* 4056 4176. *sarmenti*, *Pass.* ... 4060
 = *ononidis*, *Auers.* 4177. *periclymeni*, *Cr.* ... 4061
 4173. *exilis*, *Ces.* ... 4057 4178. *paulowniæ*, *Roum. F.*
 4174. *terebinthi*, *Fab.* ... 4058 *Gall.*
 4175. *longisporus*, *Curr.* 4059

GEN. 7. **ANTHOSTOMA.** Sporidia continua, fusca.* ANTHOSTOMELLA. *Sporidia continua, fusca.*

4179. clypeata, <i>Not.</i> ...	1051	4187. unedonis, <i>Not.</i> ...	1058
4180. conorum, <i>Fckl.</i> ...	1052	4188. corni, <i>Fab.</i> ...	5927
4181. pholidigena, <i>Ell.</i> ...	6320	4189. scoparia, <i>Fab.</i> ...	5928
4182. nitidula, <i>Sacc.</i> ...	1053	4190. ilicis, <i>Fab.</i> ...	5929
4183. limitata, <i>Sacc.</i> ...	1055	4191. helichrysi, <i>Fab.</i> ...	5930
4184. olearum, <i>S. & S.</i> ...	1056	4192. Picconiana, <i>Not.</i> ...	5931
4185. ostiolata, <i>Ell. & Ev.</i>	6322	4193. oreodaphnes, <i>C. & H.</i>	6321
4186. intermedia, <i>Sacc.</i> ...	1057		

*** ENTOSORDARIA. *Sporidia appendiculate.*

4194. perfidiosa, <i>Not.</i> ...	1062	4197. umbrinella, <i>Not.</i> ...	1066
4195. Poetschii, <i>Nsl.</i> ...	1063	4198. closterium, <i>B. & C.</i>	1067
4196. appendiculosa, <i>B. & Br.</i>	... 1064	4199. Rehmii, <i>Thum.</i> ...	1075

*** DESCISCENTES.

4200. genistæ, <i>Crouan.</i> ...	1077	4204. paliuri, <i>Fab.</i> ...	1086
4201. abdita, <i>B. & C.</i> ...	1078	4205. delitescens, <i>Not.</i> ...	1087
4202. cytisi, <i>Fckl.</i> ...	1079	4206. nobilis, <i>S. & S.</i> ...	1088
4203. loniceræ, <i>Fckl.</i> ...	1080	4207. picacea, <i>C. & E.</i> ...	1093

** ANTHOSTOMA. Pseudo-stromatica, *sporidia continua.*

4208. anceps, <i>S & R.</i> ...	1115	4211. xylostei, <i>P.</i> ...	1122
4209. syciospermum, <i>D.</i>		4212. alpigennum, <i>Fckl.</i> ...	1123
<i>R. & M.</i> ...	1119	4213. hederæ, <i>Fckl.</i> ...	1124
4210. oxyacanthæ, <i>M.</i> ...	1121	4214. scoriadeum, <i>Fr.</i> ...	1127

GEN. 8. **DIDYMOSPHERIA.** Sporidia didyma, fuliginea.* *Perithecia membranacea.*

4215. conoidella, <i>S. & B.</i> ...	6573	4227. dochmia, <i>B. & Br.</i> ...	2664
4216. oxycedri, <i>Fab.</i> ...	2653	4228. permutata, <i>Sacc.</i> ...	2665
4217. scabella, <i>Quel.</i> ...	7562	4229. gregaria, <i>Speg.</i> ...	2666
4218. bacchans, <i>Pass.</i> ...	2654	4230. rubifruticosi, <i>Cr.</i> ...	2667
4219. rhamni, <i>Fab.</i> ...	2655	4231. betulæ, <i>Nesl.</i> ...	2668
4220. trivialis, <i>B. & Br.</i> ...	2658	4232. massarioides, <i>Sacc.</i> ...	6110
4221. sarmenti, <i>C. & H.</i> ...	6574	4233. lycii, <i>Kalch.</i> ...	6116
4222. vitis, <i>Fab.</i> ...	2659	4234. cupula, <i>Ell.</i> ...	6112, 6581
4223. cerasorum, <i>Fr.</i> ...	2660	4235. ceanothi, <i>C. & H.</i> ...	6587
4224. incarcerationi, <i>Desm.</i> ...	2661	4236. sarmentorum, <i>Nsl. Œst.</i>	
4225. genista, <i>Fckl.</i> ...	2662	<i>Bot. Zeit. (1875)</i>	
4226. celata, <i>Curr.</i> ...	2663		

** MICROTHELIA. *Circa ostiolum nigrificata.*

4237. epidermidis, <i>Fr.</i> ...	2677	4241. opulenta, <i>Not.</i> ...	2684
4238. albescens, <i>Nsl.</i> ...	2680	4242. spartii, <i>Cast.</i> ...	2687
4239. diplospora, <i>Cke.</i> ...	2681	4243. syringæ, <i>Fab.</i> ...	2688
4240. loniceræ, <i>Sacc.</i> ...	2682	4244. futilis, <i>B. & Br.</i> ...	2689

4245. nitidula, *Sacc.* ... 2690 4249. pulchella, *S. & S.* 2694
 4246. socialis, *Sacc.* ... 2691 4250. grumata, *Cke.* ... 2695
 4247. obliques, *B. & Br.* 2692 4251. anserina, *B. & Br.*
 4248. acerina, *Rehm.* ... 2693

*** DUBLE.

4252. micula, *Flot.* ... 2699 4255. analeptoides, *Bagb.* 2702
 4253. Wallrothii, *Hepp.* 2700 4256. grandinsecula, *Anzi.* 2703
 4254. atomaria, *Korb.* ... 2701 4257. confusa, *Garod.* ... 2704

*** AMPHISPHERIA. *Perithecia carbonacea.*

4258. sepulta, *Mont.* ... 2717 4262. megalosperma, *M.* 2739
 4259. dichroa, *D. R. & M.* 2730 4263. sapinea (*Fr.*), *Karst.*
 4260. lamprostoma, *Pass.* 7471 *Exs.* 880
 4261. Eduardi, *Pass.* ... 7472 4264. atrogrisea, *C. & P.*

GEN. 9. **LEPTOSPHERIA.** Sporidia pluriseptata.* GENUINA. *Perithecia nec clypeata.*

4265. fusispora, *Nsl.* ... 2013 4286. fuscella, *B. & Br.* 2959
 4266. lusitanica, *Thum.* 2014 4287. massariella, *S. & Sp.* 2960
 4267. phiala, *D. R. & M.* 2016 4288. platycarpa, *Sacc.* 2961
 4268. prætermisssa, *K.* ... 2944 4289. pampini, *Thum.* ... 2962
 4269. abbreviata, *Cke.* ... 2945 4290. vagabunda, *Sacc.* 2963
 4270. Thomasiana, *S. & R.* 6660 4291. consimilis, *E. & E.* 6670
 4271. tamaricis, *Grev.* ... 2946 4292. ceanothi, *C. & H.* 6662
 4272. ribis, *Karst.* ... 6661 4293. rubrotincta, *E. & E.* 6663
 4273. ramulicola, *Peck.* 2947 4294. Gillotiana, *S. & R.* 6664
 4274. anceps, *Sacc.* ... 2948 4295. californica, *C. & H.* 6665
 4275. tephrosiæ, *C. & E.* 2949 4296. odora, *C. & H.* ... 6666
 4276. platanicola, *Howe* 6130 4297. ericæ, *Fr.* ... 4380
 4277. vitis, *Cast.* ... 2950 4298. fallax, *Berl.* ... 7481
 4278. inspersa, *Schw.* ... 2951 4299. Lindigii, *Cke.*
 4279. Hazslinszkii, *Sacc.* 2952 4300. Baggei, *Auers.* ... 2979
 4280. cladophila, *Schrot.* 2953 4301. sicula, *Sacc.* ... 2980
 4281. Cookei, *Pir.* ... 2954 4302. appendiculata, *Pir.* 2993
 4282. Gibelliana, *Pir.* ... 2955 4303. Saccardiana, *Fab.* 3003
 4283. vitigena, *Sacc.* ... 2956 4304. Castagnei, *D. R. &*
 4284. avellanæ, *Fab.* ... 2957 *M.* ... 3005
 4285. coniothyrium, *Sacc.* 2958 4305. petiolicola, *Sacc.* ... 3017

* CLYPEOSPHERIA. *Perithecia clypeata.*

4306. Notarisii, *Fekl.* ... 3189 4309. osculanda, *Pr.* ... 3192
 4307. mamillana, *Fr.* ... 3190 4310. sabaligera, *B. & C.* 3193
 4308. limitata, *Pers.* ... 3191 4311. hendersoniæ, *Ellis* 3149

*** MELANOMMA. *Perithecia sub-ecorticata.*

4312. hippophaes, *Fab.* 3257 4314. rhododendri, *Rehm.* 3260
 4313. Martinianum, *Linds.* 6141

GEN. 10. **DELACOUREA**. Sporidia muriformia, fusca.* PLEOSPORA. *Asci octospori. Sporidia ecaulata.*

- | | |
|---------------------------------------|----------------------------------|
| 4315. Saccardiana, Roum. 3755 | 4323. Gilletiana, Sacc. ... 3763 |
| 4316. sambuci, Plow. ... 3756 | 4324. Spegazziniana, Sacc. 3764 |
| 4317. orbicularis, Auers. 3757 | 4325. laricina, Rehm. ... 3765 |
| 4318. clematidis, Fekl. ... 3758 | 4326. vitis, Catt. ... 3766 |
| 4319. eustegia, Cke. ... 3759 | 4327. cytisi, Fekl. ... 3767 |
| 4320. ephedrae, Fab. ... 3760 | 4328. thuridonta, C. & E. 3768 |
| 4321. collaltina, S. & S. 3761 | 4329. lichenalis, Peck. ... 3769 |
| 4322. Martianooffiana, Thum. ... 3762 | 4330. gummipara, Oud. 7499 |
| | 4331. samarae, Fekl. ... 3785 |

** DELACOUREA. *Sporidia hyalino-caudata.*

4332. insignis, Fab. ... 3871

*** JULELLA. *Asci 1-2 spori.*

4333. buxi, Fab. ... 3873 4334. monosperma, Peck. 3874

Physalospora rhodina, Berk. & Curt. in *Curtis Catalogue*, p. 148.

Gregaria, tecta. Peritheciis subglobosis, minimis, atris, ostioliis erumpentibus. Ascis clavatis, octosporis. Sporidiis sublanceolatis, continuis, hyalinis (0.03-0.05 × 0.01 mm.).

On branches of *Rosa rubiginosa*. Carolina, U.S.

Didymosphæria (Amphisphæria) atro-grisea. Cke. & Peck.

Peritheciis sparsis, convexis, in cortice immersis, cuticulo griseo tectis, demum ostiolo atro erumpentibus. Ascis cylindraceis, octosporis. Sporidiis uniserialibus, ellipticis, uniseptatis, fuscis (0.015 × 0.008 mm.).

On bark of *Quercus alba*. New York, U.S. (Peck, No. 3.) Poughkeepsie. (Gerard, No. 1.)

Although under the impression that this species was described 10 or 12 years ago, we find no reference to the description.

Massaria (Massariella) seriata, Cooke.

Peritheciis depressiusculis, majusculis, seriato-dispositis, peridermio tectis, demum fissuratis. Ascis clavatis. Sporidiis ellipticis, 60 × 18-20 μ , uniseptatis, medio constrictis, fuscis, cellulis æqualibus, episporio crasso, hyalino obvolutis.

On branches of *Carya*. S. Carolina (Rav., 1763).

Massaria distincta, Cke. **Sphæria distincta**, Schwein. *Amer. Bor.*, No. 1655, *Sacc. Syll.* 4359.

Sporidiis biserialibus, 5-septatis, fuscis, 70-80 × 16-18 μ , medio constrictis, mucro hyalino primo obvolutis.

Massaria olivacea, Cooke. **Sphæria olivaceo-hirta**, Schwein. *Amer. Bor.*, No. 1656, *Sacc. Syll.* No. 4353.

Sporidiis biserialibus, lanceolatis, 3-5 septatis, fuscis (50-60 × 12-16 μ), primitus ocellato nucleatis, medio-constrictis.

Massaria (Massariella) scoriadea, Fr. **Anthostoma scoriadeum**, Sacc. *Syll.* 1127.

Sporidiis ellipticis, uniseptatis, $70 \times 23 \mu$, cellulo superiori majusculo, medio constricto, episporio crasso, hyalino. Ex. Fries S. S. 344.

Undoubtedly the authentic specimen we have from Fries answers in all points to this section of the genus *Massaria*.

Massaria (Massariella) bispora, Curtis *Catalogue and Herb.*

Peritheciis corticulis, subgloboso-depressis, tectis, subsparsis, ostiolo peridermium perforante matrice sporis inquinantibus. Ascis clavatis. Sporidiis ellipticis, uniseptatis, fuscis, $45 \times 18-20 \mu$, cellulis æqualibus, medio constrictis, mucro hyalino obvolutis.

On back of *Acer*. (Dr. Curtis.)

KANSAS FUNGI.—Kellerman and Swingle have issued the first fascicle of their specimens of Kansas Fungi, consisting of 25 species, for the sum of one dollar and a quarter. This series it is proposed to confine to select species, which are either new, hitherto undistributed, or in some respect especially interesting. The following contents of the first fascicle will indicate the scope of the issue.

1. *Æcidium Æsculi*, E. & K.
2. *Æcidium Dicentræ*, Trelease.
3. *Ceratophorum uncinatum* (Clinton), Sacc.
4. *Cercospora Cucurbitæ*, E. & E.
5. *Cercospora Desmanthi*, E. & K.
6. *Cercospora lateritia*, Ell. & Halsted.
7. *Cercospora seminalis*, E. & E.
8. *Glæosporium apocryptum*, E. & E.
9. *Glæosporium decipiens*, E. & E.
10. *Melasmia Gleditschiæ*, E. & E.
11. *Microsphaera quercina* (Schw.) Burrill.
12. *Peronospora Arthuri*, Farlow.
13. *Peronospora Corydalis*, De Bary.
14. *Phragmidium speciosum*, Fr.
15. *Puccinia emaculata*, Schw.
16. *Puccinia Schedonnardi*, Kell. & Sw.
17. *Puccinia (Leptopuccinia) Anthii*, Schw.
18. *Ramularia Virgaureæ*, Thuem.
19. *Ræstelia pyrata* (Schw.) Thaxter.
20. *Scolecotrichum maculicola*, E. & K.
21. *Septoria argophylla*, E. & K.
22. *Septoria Speculariæ*, B. & C.
23. *Sphaerotheca phytophila*, Kell. & Sw.
24. *Uredo Quercus*, Brondeau.
25. *Ustilago Zeæ Mays* (DC.), Winter.

COOKE HERBARIUM.

The large herbarium of Fungi transferred by M. C. Cooke to the Royal Herbarium at Kew, is now for the most part incorporated with the National collection. The total number of specimens reach to 46,000, being nearly double that of the Berkeley Herbarium, and these, approximately, represent:—

Hymenomycetes	...	...	...	11,000
Gasteromycetes and Myxogastres	...	...	...	2,000
Ustilagines and Uredines	...	...	...	6,000
Discomycetes	...	...	...	6,000
Pyrenomycetes	...	...	...	12,000
Incompletæ	...	...	...	9,000

The number of species has not been calculated, a large number of which are types, and others as important as types; such, for instance, are the individual specimens used in the illustration of "Mycographia." The entire collection is a most valuable one, and has fitly become national property, containing as it does contributions from most of the mycologists of the past forty years. Berkeley, Broome, Bloxam, Cesati, Currey, Curtis, De Notaris, Duby, Ellis, Fries, Kalchbrenner, Leveille, Montagne, Peck, Ravenal, Rabenhorst, Westendorp, Winter, &c., &c.

WHAT IS LICHENOPSIS?

By M. C. COOKE.

Schweinitz described and figured in his "*Fungi Americani Boreali*" a fungus which he there named *Lichenopsis sphaeroboloides*, and, upon the faith of this description and its illustrative figures, Prof. Saccardo has, in his "*Sylloge*" (Vol. iii., p. 442), included it in *Sphaeropsidæ*. This is the first interpretation of the genus.

In the Berkeley Herbarium there is a very good specimen of this fungus, contributed by Schweinitz himself, which accords very well with the description externally, and also internally to a certain extent, but not entirely, since this is a *Discomycete*, differing very little, if at all, from *Schmitzonia*; and this is the second interpretation accepted by Berkeley, and Curtis, and also, we fancy, by most of the American botanists.

The third interpretation appears to be an accidental one. It is based on specimens from S. Carolina in the Berkeley Herbarium, and included under *Lichenopsis sphaeroboloides*, with which it agrees in external appearance and habit, but differs in fructification. Which of these is the true *Lichenopsis*? There certainly seems to be a strong presumption in favour of the authentic specimen derived from Schweinitz. It is erumpent, with the appearance of a *Stictis*, the hymenium

soon falling out and leaving a cup-shaped hollow. This hymenium is a compact mass of long cylindrical asci, mixed with paraphyses, the tips of which are pyriform and coloured. The sporidia are filiform, the length of the ascus (150-160 μ) multiseptate and hyaline, as in *Schmitzomia*. Making allowance for the inferior microscopes at the time when this description was constructed, as well as the slight care bestowed upon microscopical characters, it is not unreasonable to suppose that the coloured tips of the paraphyses were interpreted by Schweinitz as the spores, and the septate hyaline sporidia as the long septate basidia. This view is strengthened by a comparison of the figures, given with the description, and the fructification of the Schweinitzian specimen. No one has seen a specimen corresponding with the description as interpreted by Saccardo; and yet the species, as represented by the specimen alluded to, has several times been found in the United States. We infer, therefore, that *Lichenopsis sphaeroboloides* is the Stictiform Discomycete published in Ravenal's "Carolina Fungi" (iii., No. 72), resembling, if not congeneric with *Schmitzomia*. And, further, that the description drawn up by Schweinitz was imperfect and misleading through a wrong interpretation of the facts. Hence the genus *Lichenopsis*, as a genus of Sphæropsoid Fungi, is untenable, and should be regarded as a spurious, or, at the very least, a very doubtful genus.

The third interpretation, as already stated, is based upon specimens which have the external appearance of the Schweinitzian specimen, but with different fruit. In this the asci are also cylindrical, but broader, and contain eight large cylindrical sporidia (120-135 \times 15-17 μ) divided transversely by numerous septa, each cell so formed being at length longitudinally divided, so that the entire sporidium is muriform and hyaline. At complete maturity the joints separate, as figured by Berkeley in the sporidia of *Platygrapha magnifica* ("Annals of Natural History," Vol. xiv., t. 5, fig. 26 C).

This pseudo-Lichenopsis would, but for the longitudinal division of the cells, rank with Berkeley's *Platygrapha magnifica*, which, by-the-by, is entirely out of place in *Platygrapha*, has nothing in common with the genus *Platygrapha* as recognized by Montagne, and, in our opinion, is entitled to rank with fungi, and *not* with Lichens. With this impression, therefore, we are disposed to place these two fungi in a distinct genus of *Sticticiei* under the name of—

PLATYSTICTA, n.g. Erumpens, orbicularis, urceolatis, marginatis; disco plus minus deccedente. Sporidiis magnis, hyalinis, pluriseptatis vel muriformibus, dissilientibus.

* *Sporidiis pluriseptatis.*

PLATYSTICTA MAGNIFICA (B. & Br.). *Platygrapha magnifica*, B. & Br. Ceylon Fungi, No. 973 e, t. 5, fig. 26.

** *Sporidiis muriformibus.*

PLATYSTICTA SIMULANS, Cke. & Mass. *Lichenopsis sphaeroboloides*, Berk in Herb. pro parte.

Immersa, erumpens, discoidea, urceolatis, margine albo. Aseis cylindraccis. Sporidiis cylindraccis, utrinque rotundatis, medio constrictis, pluriseptatis, dein muriformibus, hyalinis, $120-135 \times 16-17 \mu$.

On *Quercus*. S. Carolina. No. 2423.

THELEPHOREI.

It has long been, and probably still is, somewhat a reproach to mycologists that whereas so much has been done in other orders of Fungi, the *Thelephorei* remain pretty much the same as they were fifty years ago. Yet there is ample scope for improvement, since the microscope has been very little brought into use with the view of facilitating their classification or more accurate determination. One slight step was taken in advance when certain species of *Stereum* were separated, and constituted a distinct genus, under the name of *Hymenochaete*, but even this failed to command universal acceptance. This failure was hardly based upon legitimate grounds, for the genus is a most natural one, but may partly be attributed to a prejudice against microscopical characters, on account of the additional labour involved, until it became almost compulsory. Another effort was subsequently made to obtain recognition for the genus *Peniophora*, which to some extent approached *Hymenochaete*, and was composed, for the most part, of species separated from the large genus *Corticium*. This, again, was not at all generally appreciated, and mycologists still went on attempting to identify species by the aid of a pocket lens, and the short, imperfect diagnosis of the older authors.

Anyone who has ever attempted the identification in this manner of the species of *Corticium* is painfully conscious of the difficulties which beset the way. The consultation of any good herbarium will consequently result in the discovery that, when the microscope is brought into operation, a series of specimens, having considerable external resemblance, are so different in fructification, and sometimes in texture, that only a very catholic spirit could induce anyone to accept them as one species. And yet there are so many good features in texture, as well as of fructification, that one is led to marvel that these have not been taken advantage of long ago to reform the classification.

It is needless to indicate here what are the features to be relied upon in a revision, since the work has long since been taken in hand by Mr. G. Massee, who for many months has been engaged in examining types, and elaborating new features

by means of which some of the larger genera may be reduced to working order. No inconsiderable portion of this monograph is already in type, and the residue ready for press at the shortest notice. When this appears we may probably embrace the opportunity to revert to the subject, and advance our opinion on the various modifications adopted. Without the aid of authentic specimens it is almost impossible in some cases to determine with exactitude the species of old authors, which depend entirely upon a short description drawn up from the external appearance. What hundreds of specimens have had to be examined in the course of these researches must be left to the imagination, and it is to be hoped that the results will be accepted with that appreciation which so much arduous and honest labour deserves. It would be too much to expect that any first effort of this kind should be absolutely perfect, but we may be sure that it will mark a step in advance, and render a difficult branch of the study more easy of comprehension.

Let anyone make the experiment for himself by consulting a large herbarium, in which, perhaps, some common species is represented by 50 or 100 specimens from various localities, determined, it may be, by several different individuals. Externally, it is true that they may bear a general resemblance the one to the other, but, when more minutely examined, it will be discovered that several different types of structure, or of fructification, all bear the same name. In such a case what is to determine the true species? Undoubtedly some authentic specimen of the original type, if it can be procured; but if not, then the form most generally accepted by mycologists of repute, or who were known to be in communication with the original author. It may be contended that even the original author, not having employed the microscope, may have issued specimens under the same name which are not identical. This has been done in the *Spheriacei*, and may also occur in this group. In such a case the one which accords most closely with the description should be adopted, and accepted, supplemented with such details as may prevent a similar error in the future.

The advent of a monograph of the *Thelephorei* will, therefore, be anticipated with pleasure, and it is to be hoped that in a few weeks the first portion will be in the hands of all interested parties.

FUNGUS FORAYS, 1889.—Hitherto arrangements for the annual Forays are incomplete. Of course the Woolhope Club will occupy as usual the first week in October. The Hampshire Field Club have intimated their intention of continuing the precedent of the past two years, and there will be excursions in Epping Forest.

MEMORABILIA.

LINDBERG.—By the death of Professor Lindberg, of Helsingfors, bryologists have lost a valuable coadjutor at the early age of 54. During his career he did considerable service, although we somewhat doubt the expediency of changing so many names, on the ground of priority, to which he was addicted.

CLAVARIA CLAVATA, Peck., in Ellis N. Amer. Fungi, No. 613, 25th report of New York State Museum of Natural History, p. 83, is undoubtedly the same as *Clavaria paludicola*, Lib., Pl. Crypt. Ard. fasc. 4, No. 322 (1837).

BRAITHWAITE'S MOSS FLORA.—We are informed that another part of this valuable work may be anticipated about July.

FUNGI, THEIR NATURE, USES, ETC.—Another edition, the fourth, of this volume by M. C. Cooke, in the International Scientific Series, has just appeared. It is almost unique that a book on Fungi, in this country, should proceed beyond a first, or at most a second edition.

COOKE'S ILLUSTRATIONS OF FUNGI.—This work has now reached its 69th part, and plate 1,098. Progress has of late been very slow, on account of the difficulty experienced in getting the plates printed. Part 70 will include the greater part of *Cantharellus*, leaving *Marasmius* as the only remaining large genus to be encountered. The end is therefore in sight.

COOKE'S BRITISH FRESH WATER ALGÆ.—As only about four copies of this work still remain to be sold, it is expedient that any person, or Society, intending to purchase should at once come to a resolution. All the plates are "cleaned off," and hence the work is not likely to be reproduced. There is no doubt that stray copies will soon advance considerably in price.

BOLETUS AND POLYPORUS.—It has been suggested that on the completion of Cooke's Illustrations of Fungi, embracing all the British Agaricini, a new work should be projected of the same character, giving coloured illustrations of *Boletus*, *Polyporus*, *Trametes*, *Dadalea*, *Merulius*, etc.; in fact, all the British Polyporei. It is presumed that such a work could be contained within the limits of a single volume of about 10 parts, with 16 plates each. The suggestion is still under consideration, and, if attempted, it would be as a *distinct* work, so as not to extend the "Illustrations of Fungi" beyond the projected eight volumes.

EPHELIS.—A recent communication by M. C. Cooke and G. Massee, in the "Annals of Botany," suggests that the original

genus established by Fries belongs to the *Sphaeropsideæ*, and that the name should not be employed in *Discomycetes* (as has been done by Mr. Phillips). A new development is detailed in the above paper, in which a Pyrenomycete (*Balansia trinitensis*, C. & M.) is shown to have been produced from the stroma of *Ephelis trinitensis*, C. & M., a species closely allied to *Ephelis mexicana*.

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Grevillea.

A QUARTERLY RECORD OF
CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

EDITED BY M. C. COOKE, M.A., A.L.S.,

*Author of "Handbook of British Fungi," "Illustrations of British
Fungi," "Fungi, their uses," &c., "Rust, Smut, Mildew,
and Mould," "British Fresh Water Algæ,"
"British Desmids," &c., &c.*

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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

NEW AUSTRALIAN FUNGI.

By M. C. COOKE.

(Continued from Vol. XVII., p. 81.)

Those to which an asterisk (*) is prefixed communicated by Baron F. von Mueller.

Agaricus (Amanita) murinus, Cke. & Mass.

Pileo e campanulato expanso, obtuse umbonato, nitido, murino, subundo, margine striatulo ($1\frac{1}{2}$ -2 in. diam.). Stipite tenui, stricto, (3 unc. long, $\frac{1}{4}$ unc. crass.), albido, deorsum subfibrilloso, annulo pendulo, volva bulboso, laxo, lamellis liberis, subconfertis, albis, vel leniter roseo-tinctis. Spores $7 \times 5 \mu$.

On sandy soil. Brisbane. (Bailey, 651, 659.)

Agaricus (Amanitopsis) farinaceus, Cke. & Mass.

Albus, fungus totus farinaceus. Pileo carnoso, convexo, applanato ($2\frac{1}{2}$ -3 μ), albido, verrucis erectis prominulis, præcipue disco ornato, margine tenui, velo adnato fimbriato, stipite æquali, (3-4 $\times \frac{1}{2}$ unc.), exannulato, faretto, albo, volva bulbosa, margine libero crispato. Lamellis liberis, sublatis, confertis, albo lutescentibus. Sporis globosis, 10 μ diam.

On the ground. Brisbane. (Bailey, 690.)

Agaricus (Amanitopsis) pulchellus, Cke. & Mass.

Pileo convexo-expanso (1-2 unc. diam.) miniato, verrucis irregularibus, facile secedentibus obecto, margine croceo, striatulo; stipite mox cavo, albo (2-2 $\frac{1}{2}$ unc. long, $\frac{1}{4}$ unc. crass.), volva adnato, marginato, basi ovato-bulbosa, annulo obsoleto, lamellis liberis, ventricosis, confertis, albis, demum flavo-tingentibus. Sporis subglobosis, 7-8 μ .

On the ground. Victoria. (Mrs. Martin, 448, with figs.)

Very much resembling a diminutive form of *Ag. muscarius* without a ring.

Agaricus (Lepiota) fimetarius, C. & M.

Pileo carnoso, tenui, campanulato, obtuse umbonato ($\frac{1}{2}$ - $\frac{3}{4}$ unc. lato), pallido floccoso, squamulis adnatis, floccosis obscurioribus ornato. Stipite (1-2 unc. long) gracili, subæquali, deorsum

squamuloso, annulo fugaci, lamellis liberis, lanceolatis, confertis, albidis. Sporis ovato-apiculatis ($7 \times 5 \mu$).

On dung. Brisbane. (*Bailey*, 759.)

Similar in some respects to *Ag. subelypeolarius*, but with a distinctly squamulose stem.

Agaricus (*Lepiota*) ochrophyllus, *Cke. & Mass.*

Pileo carnoso, explanato, obtuso, pallide ochraceo, squamis innatis, concentricis obscurioribus variegato (4-6 unc. lat.), margine striatulo, stipite solido, erecto, glabro, demum striato-fibrilloso, deorsum bulboso (7 unc. long, 1 unc. crass.), concolori, annulo supero, pendulo, lamellis latis, postice attenuatis, liberis, subconfertis, ochraceis. Sporis ellipticis, $12 \times 8 \mu$.

On sandy land near Brisbane. (*Bailey*, 655.)

Colour of the gills "like new washleather." A very fine species, allied to *A. procerus*.

Agaricus (*Schulzeria*) revocans, *Cke. & Mass.*

Pileo subcarnoso, convexo, applanato ($2-2\frac{1}{2}$ unc. lat.), molli, pallido, squamis obscurioribus, præcipue disco, maculato, margine tenui, stipite subbulboso, erecto, exannulato, deorsum fusco, sursum albido, glabro (3 unc. long, $\frac{1}{4}$ unc. crass.), demum cavo. Sporis $6 \times 4 \mu$.

In gardens. Brisbane. (*Bailey*, 684.)

Agaricus (*Armillaria*) fulgens, *Cke. & Mass.*

Pileo convexo-applanato ($2\frac{1}{2}$ -3 unc. diam.), læte aureo, lævi, glabro, nitido, stipite erecto, gracili (4-5 unc. long, $\frac{1}{3}$ unc. crass.), fistuloso, lævi, pallide citrino, annulo patulo, lamellis adnatis, subconfertis, citrinis, sporis globoso-apiculatis, 8-9 μ diam.

On sandy soil. Brisbane. (*Bailey*, 696.)

Agaricus (*Tricholoma*) coarctatus, *Cke. & Mass.*

Cæspitosus, coarctatus, difformis. Pileo carnoso, convexo-plano, obtuso, viscido, alutaceo (1-3 unc. diam.), siccitate rimoso, margine lævi, stipite solido ($1\frac{1}{2}$ unc. long, $\frac{1}{3}-\frac{1}{2}$ unc. crass.), bulboso-radicato; lamellis subconfertis, latis, sinuato-adnatis, ventricosis, albis, rubro-tinctis. Sporis ellipticis, $6 \times 3 \mu$.

On sandy soil. Sandringham, Victoria. (*Tisdall*, 1, 2.)

Allied to *Ag. albo-brunneus*, Fr.

Agaricus (*Clitocybe*) subsplendens, *Cke. & Mass.*

Agreeing in most points with *Agaricus (Clitocybe) splendens*, Fr., but cæspitose in habit, and the gills only slightly decurrent. Spores subglobose, 4-5 μ diam.

Amongst grass in garden. Brisbane. (*Bailey*, 722.)

Agaricus (*Laccaria*) canaliculata, *Cke. & Mass.*

Pileo submembranaceo (1 unc. lat.) demum umbilicato, velutino, radiato-canaliculato, læte fusco, margine tenui, crenulato; stipite aequali, longitudinaliter fibrilloso, tenaci, demum fistuloso, pallidiori, lamellis adnatis, latis, subdistantibus, carneis, albo pruinosis. Sporis globosis, verrucosis, 9-10 μ diam.

Under *Casuarina* trees. Brisbane. (*Bailey*, 710.)

Agaricus (Pleurotus) sulciceps, *Cke. & Mass.*

Pileo carnosus, tenui, e plano infundibuliformi, radiato-rugoso, subsulcato, glabro, fuligineo, disco obscuriori, subvelutino, margine patente, crispato, plerumque sublobato (1-2 unc. diam.). Lamellis tenuibus, distantibus, postice attenuatis, decurrentibus, intersticiis venosis, albis. Stipite tenui, cavo, compresso, curvulo, striato, albido (1-1½ unc. long, 2 lin. crass.). Sporis 5 × 3 μ.

On rotten wood. Brisbane. (*Bailey*, 734.)

Agaricus (Annularia) insignis, *Cke. & Mass.*

Amplius. Pileo carnosus, convexo, pallido, cute in squamis latis, adnatis, obscurioribus diffracto, margine incurvo (3-5 unc. diam.), carne crasso (½-¾ unc.), firmo, albo; stipite curto, obelavato, albido, crasso (2 unc. long, 1 unc. et ultra crass.), annulato, infra annulum squamis fuscis zonato, plerumque carneo-maculato. Lamellis liberis, postice rotundatis, subconfertis, albidis, dein salmonicoloribus. Sporis subglobosis, laevibus, 5 μ.

On the ground. River Yarra, Victoria. (*Tisdall*, 8.)

Agaricus (Hebeloma) gigaspora, *Cke. & Mass.*

Pileo carnosulo, convexo-applanato, umbonato (½ unc. diam.), nudo, glabro, udo, luteo-fusco; stipite premorso-radicato, fistuloso, æquali, vel basim incrassato (1½ unc. long), glabro, pallidior, mycelio profuso. Lamellis latis, adnatis, subconfertis, olivaceis. Sporis majusculis, 18 × 8-9.

On the ground. Yarra Falls, Victoria. (*Tisdall*, 20.)

Allied to *A. petiginosus*, P.

Agaricus (Flammula) avellanus, *Cke. & Mass.*

(GYMNOTI.) Pileo carnosus, convexo, siccus, glabro, avellano-brunneo (2 unc. lat.). Stipite sursum attenuato, striato, pallidiori (2-2½ unc. long, ¼-½ unc. crass.); lamellis adnatis, latis, vix confertis, fulvo-ferrugineis. Sporis ellipticis, 10 × 6 μ.

On sandy ground. Brisbane. (*Bailey*, 653.)

The gills are rather paler than the pileus. Most closely to *A. Tammii*.

Agaricus (Flammula) prasinus, *Cke. & Mass.*

Pileo carnosus, convexo-expansus, siccus, sericeo, prasinato (1-2½ unc. diam.). Stipite æquali, stricto, farcto, glabro, laevi, citrino, (1½-2½ unc. long, ¼-½ unc. crass.); lamellis adnatis, ventricosis, luteis, fusciscentibus. Sporis 10-12 × 6 μ.

On the ground. Lilydale. (*Mrs. Martin*, 447, with fig.)

Agaricus (Psalliota) elatior, *Cke. & Mass.*

Pileus tenuiter carnosus, convexo-plano, umbonato (1½ unc. diam.) fusco, squamis obscurioribus adpressis tecto. Stipite erecto, cylindrico, elongato (3-5 unc. longa, 2 lin. crass.), sericeo, albido, basi incrassato, annulo supero, secedente; lamellis liberis, subconfertis, ventricosis, purpureo-fuscis. Sporis minutis (3 × 2 μ).

On the ground. Eltham, Victoria. (*Tisdall*, 23.)

Agaricus (Hypholoma) adustus, *C. & M.*

Pileo carnosus, convexo, obtuso, atro-fusco, squamis innatis obscurioribus variegato (2 unc. lat.), stipite æquali, pallidiori,

glabro ($1\frac{1}{2}$ -2 unc. long, $\frac{1}{4}$ unc. crass.) intus *flavidis*, faretis, lamellis adnatis, confertis, aridis, lividis, dein brunneo nigricantibus. Sporis $7-8 \times 4-5 \mu$.

On the ground. Brisbane. (*Bailey*, 672.)

Allied to *Ag. lacrymabundus*, whole plant becoming quite black in drying.

Agaricus (Panæolus) eburneus, *C. & M.*

Pileo carnosulo, convexo-campanulato, obtuso, lævi, eburneo, nitente (1-2 unc. lat.) stipite fragili, erecto, elongato, stricto, æquali, albo-nitente, demum cavo, exannulato (4-6 unc. long, 2 lin. crass.) lamellis ventricosis, confertis, adnatis, nigrescentibus, sporis ellipticis, utrinque attenuatis, $15 \times 9 \mu$.

Mostly on dung. Brisbane. (*Bailey*, 661.)

Resembling *Ag. separatus*, but white, and without a ring.

Agaricus (Panæolus) veluticeps, *Cke. & Mass.*

Pileo convexo-campanulato, obtuso ($\frac{1}{2}$ - $\frac{3}{4}$ unc. diam.) velutino, griseo, margine glabro, brunneo; stipite elongato (3-4 unc.) gracili, fistuloso, glabro, argente-griseo, lamellis adnatis, subconfertis, ventricosis, nigrescentibus, sporis elliptico-acuminatis, $14-15 \times 10 \mu$.

In garden amongst grass. Brisbane. (*Bailey*, 706.)

Remarkable for the silvery grey velvety pileus with a smooth brown margin.

Agaricus (Panæolus) ovatus, *Cke. & Mass.*

Pileo carnosulo, ovato, obtuso, opaco, demum diffracto-rimoso, albo; margine diu incurvo, ($1\frac{1}{2}$ -2 in. diam.) stipite erecto (4-6 unc. long), æquali, firmo, faretto, ad basim incrassato, sericeo, albo, lamellis griseo-nigrescentibus, adfixis, subconfertis, latiusculis. Sporis $14-15 \times 10 \mu$.

On manure, Yarra, &c. Victoria. (*Tisdall*, 6, 16.)

Hygrophorus candidus, *Cke. & Mass.*

Candidus. Pileo carnosulo, convexo, viscido, disco fusco-tincto, obtuso ($1\frac{1}{2}$ unc. diam.), margine tenuissimo. Stipite subflexuoso, deorsum attenuato, faretto ($2-2\frac{1}{2}$ unc. long), albo, hinc illic ochraceo-maculato. Lamellis subdistantibus, postice rotundatis, sporis subglobosis, $4 \times 3 \mu$.

On the ground. Sandringham, Victoria. (*Tisdall*, No. 14.)

Cantharellus (Mesopus) aureolus, *Cke. & Mass.*

Cæspitosus, aureolus. Pileo tenui, plano-depresso, subtiliter pubescente, margine inflexo ($\frac{1}{4}$ - $\frac{1}{2}$ unc. diam.). Stipite gracili (1 unc. long), æquali, substriatulo, lamellis numerosis, subconfertis, augustissimis, adnato-decurrentibus, sporis globosis, $5-6 \mu$ diam.

On the ground. Brisbane. (*Bailey*, 787.)

Whole plant of a dark gold colour.

Marasmius lanaripes, *Cke. & Mass.*

Pileo e carnosulo coriaceo, tenui, convexo-applanato, glabro, lævi, plumbeo vel sordide atro-cæruleo (circa 1 unc. diam.); stipite erecto, rigido, demum compresso, fistuloso (2-3 unc. long, 1-2 lin.

crass.) concolori vel olivaceo-tincto, densissime velutino; lamellis adnexus, distantibus, ventricosis, fulventibus, sporis ellipticis, albis, $7-8 \times 4 \mu$.

On rotten wood. Brisbane. (Bailey, 721.)

Whole plant turning blackish in drying.

Boletus (Hyporhodium) lacunosus, Cke. & Mass.

Pileo e pulvinato expanso, molli, subviscoso, pallide ochraceo, fusco, vel sub-brunneo (2-4 unc. diam.) stipite subæquali, vel sursum attenuato, profunde lacunoso, pallido (3-4 unc. long, 1-2 unc. crass.) tubulis adnatis, poris majusculis, angulatis, albidis dein incarnatis. Sporis amygdalæformibus, asperulis, $15 \times 10 \mu$.

On sandy ground. Brisbane. (Bailey, 649, 664, 670.)

Remarkable for the lacunose stem, but especially for the rough almond-shaped spores. Allied to *Boletus megalosporus*, Berk.

Strobilomyces pallescens, Cke. & Mass.

Pileo pulvinato, squamis crassis obtuse conicis imbricato, roseo-purpureo, demum pallescente, velo membranaceo lacerato, margine adherente. Stipite æquali, striato, pallido; tubulis liberis, utrinque abbreviatis, medio longissimis, poris majusculis, angulatis, lutescentibus. Carne fracto cærulescente, mox albidis. Sporis fuscis, longitudinaliter rugosis, $18-20 \times 8 \mu$.

At the base of trees. Brisbane. (Bailey, 744.)

Very different in colour, and in the character of the warts to *S. rufescens*.

Strobilomyces rufescens, Cke. & Mass.

Tota rufescens. Pileo hemisphærico (3-4 unc.) obtusissimo, verrucis conicis imbricatis dense obsito, apicibus acutis recurvis secedentibus, margine velo ampliato fimbriato; stipite subbulboso, elongato (6-7 unc. long, 1 unc. crass.), sursum pallido, deorsum rufescens, striato, solido, tubulis liberis, postice abbreviatis; poris angulatis, majusculis, fulvescentibus. Sporis fuscis, $18-20 \times 9 \mu$.

At the base of trees. Brisbane. (Bailey, 685.)

Strobilomyces velutipes, Cke. & Mass.

Nigrescens. Pileo pulvinato, obtuso, deplanato, squamis crassis, irregularibus obtusis imbricato, (2-3 unc. diam.), margine velo crenulato. Stipite æquali, velutino, sursum sulcato (2 unc. longa, $\frac{1}{4}-\frac{1}{2}$ unc. crass.). Tubulis elongatis, utrinque abbreviatis, poris angulatis, majusculis. Sporis subglobosis, lævibus, læte fuscis, $8 \times 5-6 \mu$.

On the ground. Brisbane. (Bailey, 751.)

Resembling *S. strobiliaceus* and *S. nigricans*, but entirely differing in the spores.

Thelephora (Apus) stereoides, Cke. & Mass.

Coriacea. Pileis effuso-reflexis, villosis, ferrugineis, margine acuto crispulo, hymenio obscuriori, rugoso, acie pallidiore, rufescente. Sporis globosis, verrucosis, fuscis, $7-8 \mu$ diam.

On bark. Oakleigh, Victoria. (Mrs. Martin, 450.)

A very characteristic species, with the habit of a *Stereum* or

Hymenochate, and the structure and spores of *Thelephora* extending 3 or 4 inches, with the reflexed pilei about half an inch deep.

Lysurus australiensis, Cke. & Mass.

Receptaculo (1-1 $\frac{1}{4}$ unc. longa) fusco, plerumque quinque-lobato, lobulis sursum attenuatis, primo conniventibus, demum subreflexis, medio longitudinaliter depressis, transverse rugosis. Stipite cylindrico (5 unc. longa, $\frac{5}{4}$ unc. diam.), cavo, celluloso, albido. Volva globosa, lacerato-lobata, alba. Pulpa sporifera rufo-fusca, nigrescens. Sporis 3 \times 1 μ .

On the ground. Brisbane River. (Bailey, No. 754, with fig.)

Bovista anomala, Cke. & Mass.

Subglobosa, antice posticeque depressa; cortice tenui, fragili, ad basin plus minus regulariter subcupulatum persistenti, albido; peridio crasso, coriaceo, subtiliter velutino, sordide ochraceo, superne ostiolo cylindrico, elevato-prominente, subsericeo, disco orbiculari depresso cincto; floccis hyalinis, nodulosis, 3-4 μ cr. Sporis globosis, verruculosis, brevissime pedicellatis, olivaceis, 4-5 μ diam.

On the ground. Victoria. (Mrs. Martin, 432.)

A remarkable species varying from 0.5-1.5 cm. diam. Externally resembling a *Geaster* in the prominent silky mouth surrounded by a depressed circular disc.

Asterina platystoma, Cke. & Mass.

Mycelio tenui, plus minusve orbiculato, dendritico, nigro. Peritheciis convexis, applanatis, arcte adnatis, atris, ostiolo fissurato, amplo, elongato. Ascis saccatis, octosporis. Sporidiis ellipticis, uniseptatis, medio constrictis, fuscis, loculo supero latiori, 17-18 \times 9 μ .

On living leaves of *Custanospermum*. Brisbane. (Bailey, 804.)

Ailographum melioloides, Cke. & Mass.

Epiphyllum. Maculis atris, orbicularibus vel confluentibus, filis radiantibus mycelicis compositis. Peritheciis adnatis, gregariis, elongatis, linearibus, flexuosis, atris, labris aretissime clausis, maculas sistentibus. Ascis oblongis. Sporidiis 8, ellipticis, medio constrictis, uniseptatis, hyalinis, 12-14 \times 7-8 μ .

On living or fading coriaceous leaves. Brisbane. (Bailey, 702.)

Ailographum eucalypti, Cke. & Mass.

Amphigenum. Peritheciis gregariis, maculas subcirculares sistentibus, linearibus vel confluentibus, rectis vel curvulis, labris in sicco arcte clausis, atris, minutis. Ascis clavatis, octosporis. Sporidiis biserialibus, subfusiformibus, uni-triseptatis, hyalinis, 9-10 \times 4 μ .

On dead leaves of *Eucalyptus*. Lilydale. (Mrs. Martin, No. 444.)

Rosellinia tremellicola, Cke. & Mass.

Peritheciis sparsis, globosis, superficialibus, atris, papillatis, glabris. Ascis cylindræis, octosporis. Sporidiis uniseriatis, ellipticis, continuis, fuscis, 7-8 \times 4 μ .

On *Tremella fuciformis*. Brisbane. (Bailey, No. 771.)

Stictis emarginata, Cke. & Mass.

Minutissima, gregaria, epiphylla. Cupulis immersis, erumpentibus, poro pertuso, excipulo vero destituto. Ascis clavato-cylindricis, sessilibus. Sporidiis filiformibus, continuis, hyalinis, ascis aequantibus, $70-75 \times 2 \mu$.

On *Eucalyptus* leaves. Victoria. (Mrs. Martin, 439.)

Phoma Daviesiæ, Cke. & Mass.

Hypophylla. Peritheciis minutissimis, tectis, atris, maculas nebulosos efformantibus, conidiis ovalibus, profusis, hyalinis, $5 \times 3 \mu$.

On dead leaves of *Daviesia latifolia*. Victoria. (Mrs. Martin, No. 438.)

Leptothyrium eucalyptarum, C. & M.

Peritheciis in macula exarida sparsis, scutiformi-applanatis, atris, angulosis, triangularis, vel subquadratis, medio stellato dehiscens. Sporulis, ovoideis, continuis, hyalinis $4 \times 3 \mu$.

On fallen leaves of *Eucalyptus*. Lilydale, Victoria. (Mrs. Martin, 439.)

Polystigmina, Sacc. Syll. III., 622.

MARTINELLA, sub. gen. nov. Conidia subsphaeroidea, vel elliptica, continua, fusca.

Polystigmina (Martinella) eucalypti, Cke. & Mass.

Epiphylla. Stromate suborbiculari, carnoso, planiusculo, rufo-fusco; peritheciis minutissimis, immersis, saturioribus, ostiolo fissurato. Sporulis sphaeroideo-ovalis, continuis, late fuscis, $6 \times 4 \mu$.

On leaves of *Eucalyptus*. Lilydale, Victoria. (Mrs. Martin, 443.)

Glæosporium Hedycaryi, Cke. & Mass.

Epiphyllum. Maculis orbicularibus, nigricantibus, acervulis solitariis vel gregariis; conidiis oblongis, utrinque rotundatis, granulosis, hyalinis, $18 \times 4 \mu$.

On fading leaves of *Hedycarya Cunninghamii*. Macedon, Victoria. (Mrs. Martin, No. 431.)

***Sterigmatocystis chlorina**, Cke. & Mass.

Effusa, maculiformia, atro-fusca; hyphis erectis, simplicibus, supra globoso-inflatis; vesiculæ processibus cuneatis, radiantibus, hyalinis; basidia 3-4, ellipsoidea, olivacea, gerentibus. Conidiis globosis, lævibus, olivaceis, $5-6 \mu$ diam.

On fruit of *Citrus*. E. New Guinea. (Dr. McGregor.)

Cercospora Daviesiæ, C. & Mass.

Epiphylla. Maculis fuscis, irregularibus, angulatis; hyphis fasciculatis, abbreviatis; conidiis cylindræcis, vel sursum attenuatis, obtusis, curvulis, arcuatis, 5 septatis, pallide fuscis, $60 \times 4 \mu$.

On fading leaves of *Daviesia latifolia*. Victoria. (Mrs. Martin, No. 438.)

Cercospora eucalypti, Cke. & Mass.

Maculis subcircularibus, vel confluentibus, pallidis, roseo mar

ginatis, hyphis abbreviatis. Conidiis cylindricis, curvulis, utrinque obtusis, vix septatis, pallidis, $30-35 \times 4 \mu$.

On fading leaves of *Eucalyptus*. Oakleigh. (Mrs. Martin, 436.)

***Stilbum formicarum**, Cke. & Mass.

Stipitibus elongatis, gracilis (5-8 mm. long), atris, flexuosis, deorsum leviter incrassatis, capitulo obovato, roseo, conidiis ellipticis ($10 \times 3 \mu$) hyalinis.

On dead ant (*Formica*). Cheltenham, Victoria. (French.)

BRITISH PYRENOAMYCETES.

By G. MASSEE.

(Continued from Vol. xvii., p. 75.)

Fam. 13. ENDOXYLEÆ (IMMERSÆ, Fr.). Perithecia immersed, simple, with a short erumpent neck.

GEN. 1. **ENDOXyla**, Fekl. Stroma obsolete, sporidia allantoid, pale brown.

E. parallela, Fr., Sacc. Syll. 672.

On pine. Glasgow, Mar Forest, N.B.

E. operculata, A. & S.

Appin, N.B.

GEN. 2. **XYLOSPHÆRIA**, Cooke, Grev. vii., 86. Perithecia innate, immersed, growing on wood. Sporidia continuous, or septate, brown.

* **ANTHOSTOMA**. Sporidia continuous.

X. melanotes, B. & Br., Sacc. Syll. 1097; Hdbk. 2632. (= *Schmidtii*, Nke.).

On oak palings, Batheaston; on ash. King's Lynn, Ringstead, Leatherhead.

X. xylostei, Pers., Sacc. Syll. 1122; Hdbk. 2641.

On honeysuckle. King's Cliffe, N. Wootton.

** **PHÆOSPERMA**. Sporidia uniseptate.

X. anserina, Pers., Sacc. Syll. 2842; Hdbk. 2637.

On willow, etc. Shrewsbury, Lynn.

X. apiculata, Curr., Sacc. Syll. 2845; Hdbk. 2635.

On dead wood. Shere, Weybridge, Chiswick.

* * KALMUSIA. *Sporidia* 3 or multiseptate.

X. hemitapha, *B. & Br.*, *Sacc. Syll.* 3375 ; *Hdbk.* 2634.

On oak. Bath, Shere.

X. hypotephra, *B. & Br.*, *Sacc. Syll.* 3377 ; *Hdbk.* 2633.

On oak and beech. King's Cliffe ; Leigh Wood, Bristol ;
Elton, Norths ; Terrington St. Clements.

GEN. 3. **THYRIDIUM.** *Stromia* effused, woody.

Sporidia muriform.

T. lividum, *Pers.*, *Sacc. Syll.* 3991.

On dead branches of ivy, etc. Appin, Forres, N.B.

Fam. 14. OBTECTÆ, *Fries.* Perithecia corticolous, innate, covered.

GEN. 1. **MASSARIA.** *Sporidia* involved in a hyaline mucus, oozing out and usually blackening the matrix.

* MASSARIELLA. *Sporidia* bilocular, dingy.

M. bufonia, *B. & Br.*, *Sacc. Syll.* 2705 ; *Hdbk.* 2532.

On dead branches of oak. Weybridge, Easton, N. Wootton,
Eltham.

M. Curreyi, *Tul.*, *Sacc. Syll.* 2709 ; *Hdbk.* 2534.

On lime. Blackheath, Eltham Park, Weybridge ; Morden
College Garden, Oxford.

M. scoriadea, *Fr.*, *Sacc. Syll.* 1127 ; *Hdbk.* 2615.

On birch. Orton Wood, Capel Curig.

** EUMASSARIA. *Sporidia* 2 to many septate, brown.

M. fœdans, *Fr.*, *Sacc. Syll.* 2852 ; *Hdbk.* 2529 (= *amblyospora*,
B. & Br.).

On elm. Jedburgh, Batheaston, Tooting, Eltham, Black-
heath, Trefriew.

M. pupula, *Fr.*, *Sacc. Syll.* 2850 ; *Hdbk.* 2530.

On *Philadelphus*. Apethorpe.

M. gigaspora, *Fekl.*, *Sacc. Syll.* 2860 ; *Hdbk.* 2531 (in part).
Blackheath, Darenth.

M. inquinans, *Tode.*, *Sacc. Syll.* 2861 ; *Hdbk.* 2531 (in part).

On *Acer*. Sydenham, Hampstead, Somerset, Terrington.

M. argus, *B. & Br.*, *Sacc. Syll.* 2868 ; *Hdbk.* 2528.

On birch. Spye Park, Wilts ; Surrey, Weybridge.

M. macrospora, *Desm.*, *Sacc. Syll.* 2880 ; *Hdbk.* 2521.

Bath, Bowood, King's Lynn.

* * MASSARINA. *Sporidia* 2 or many septate, hyaline.

M. cburnea, Tul., *Sacc. Syll.* 3390; *Hdbk.* 2533.

On beech. Shere.

M. tilia, Ph. & Pl., *Sacc. Syll.* 3392.

On decorticated lime. Forres, N.B.

*** PLEOMASSARIA. *Sporidia* muriform.

M. siparia, B. & Br., *Sacc. Syll.* 3708; *Hdbk.* 2527.

On birch. Spye Park, Wilts; Blackheath, Hampstead, N. Wootton.

M. holochista, B. & Br., *Sacc. Syll.* 3709; *Hdbk.* 2535.

On Alder. Spye Park, Wilts.

M. rhodostoma, A. & S., *Sacc. Syll.* 3711.

On *Rhamnus frangula*. Lynn.

GEN. 2. **ENCHNOA**. Perithecia hairy, sporidia destitute of mucus, sausage-shaped, hyaline or olive.

E. infernalis, Kze. & Fr., *Sacc. Syll.* 372 (= *glis*, B. & Curr.).

On oak. Wrekin, Salop; Weybridge, Bishop's Wood, Sydenham.

E. lanata, Fr., *Sacc. Syll.* 372; *Hdbk.* 2652.

On birch. Appin, N.B.

GEN. 3. **CRYPTOSPHERIA**, Grev. Perithecia rather densely gregarious.

Sporidia sausage-shaped.

C. millepunctata, Grev., *Sacc. Syll.* 675; *Hdbk.* 2656 (= *pruinosa*, Fr.).

On ash. Common.

C. ocellata, Fr., *Sacc. Syll.* 680; *Hdbk.* 2658.

On branches of ash, willow, etc. Pentrich.

GEN. 4. **PHYSALOSPORA**. Perithecia rather solid, scattered, covered.

* *Sporidia* 8, ovoid or oblong, hyaline.

P. corni, Sacc., *Sacc. Syll.* 1659.

On *Cornus sanguinea*. Shrewsbury.

P. rosicola, Eckl., *Sacc. Syll.* 1662.

On *Rosa*. Kew.

*** DITOPELLA. *Sporidia* numerous.

P. fusispora, Not., *Sacc. Syll.* 1735; *Hdbk.* 2663.

On alder. Shere, Irstead, Spye Park, Wilts; Southgate Weybridge, North Wootton, Forden.

P. faretta, *B. & Br.*, *Sacc. Syll.* 1737 ; *Hdbk.* 2659.

On elm. Batheaston, Lynn.

P. Vizeana, *S. & Sp.*, *Sacc. Syll.* 1738.

On stems of *Buxus*. Milton, Forden.

GEN. 5. **ENDOPHLEA**, *Fr.* Corticolous, scattered, covered.
Sporidia 1 or many septate.

* *DIDYMELLA*. *Sporidia elliptical, 1 septate, hyaline.*

E. applanata, *Nsl.*, *Sacc. Syll.* 2130.

On *Rubus idaeus*, raspberry, etc. Worcester, Forden, Shrewsbury.

E. corni, *Sow.*, *Sacc. Syll.* 2133 ; *Hdbk.* 2733.

On dogwood.

** *CHOROSTATE*. *Sporidia subfusiform, uniseptate, hyaline.*

E. salicella, *Fr.*, *Sacc. Syll.* 2413 ; *Hdbk.* 2657.

On willow. Kew, Langley, Terrington, Wimbledon, Hampstead.

E. sphingiocarpa, *Owl.*, *Sacc. Syll.* 2414.

On *Cornus alba*. Kew.

* * *METASPLERIA*. *Sporidia multiseptate, hyaline.*

E. persistens, *B. & Br.*, *Sacc. Syll.* 3430.

On rose. King's Cliffe.

E. sepincola, *Fr.*, *Sacc. Syll.* 3433 ; *Hdbk.* 2665.

On *Cornus sanguinea*. Hampstead, Shrewsbury.

E. Ashwelliana, *Curr.*, *Sacc. Syll.* 3446 ; *Hdbk.* 2669.

On fir branches. Weybridge.

GEN. 6. **ANTHOSTOMA**. *Sporidia continuous, brown.*

* *ANTHOSTOMELLA*. *Sporidia not appendiculate.*

A. clypeata, *Not.*, *Sac. Syll.* 1051 ; *Hdbk.* 2670.

On *Rubus* and *Epilobium*. Weybridge, Shrewsbury, Forres,
Loch Lomond, Appin, N.B.

** *ENTOSORDARIA*. *Sporidia appendiculate.*

A. appendiculosa, *B. & Br.*, *Sacc. Syll.* 1064 ; *Hdbk.* 2678.

On dead bramble. Batheaston, Weybridge, Twycross.

GEN. 7. **DIDYMOSPHERIA**. *Sporidia uniseptate, coloured.*

* *Perithecia membranaceous.*

D. trivialis, *B. & Br.*, *Sacc. Syll.* 2658 ; *Hdbk.* 2673.

On *Cornus*. Batheaston, Wilts.

D. celata, *Curr.*, *Sacc. Syll.* 2663 ; *Hdbk.* 2640.

On wych elm.

D. dochmia, *B. & Br.*, *Sacc. Syll.* 2664.

On *Ulmus*. Batheaston.

**** MICROTHELIA.** *Blackened round the ostiolum.*

D. epidermidis, *Fr.*, *Sacc. Syll.* 2677 ; *Hdbk.* 2676.

On privet, clematis, elder, bramble, gooseberry, *Araucaria*, etc. King's Cliffe, Neatishead, Weybridge, Greenhythe, Apethorpe.

D. diplospora, *Cke.*, *Sacc. Syll.* 2681 ; *Hdbk.* 2677.

On bramble. Highgate, Hasbro', Norfolk.

D. futilis, *B. & Br.*, *Sacc. Syll.* 2689 ; *Hdbk.* 2674.

On *Rosa*. King's Cliffe, Batheaston.

D. oblitescens, *B. & Br.*, *Sacc. Syll.* 2692 ; *Hdbk.* 2675.

On twigs of *Cornus*. Spye Park, Wilts.

D. anserina, *B. & Br.*, *Grevillea*, *xvii.*, p. 91.

On bark. Shrewsbury.

GEN. 8. **LEPTOSPHERIA.** *Sporidia multiseptate, coloured.*

*** GENUINA.** *Perithecia not clypeate.*

L. abbreviata, *Cke.*, *Sacc. Syll.* 2945 ; *Hdbk.* 2683.

On dead bramble. Shere.

L. Tamaricis, *Grev.*, *Sacc. Syll.* 2946 ; *Hdbk.* 2681.

On *Tamarix gallica*. Dover, Eastbourne, Appin N.B.

L. Cookei, *Pir.*, *Sacc. Syll.* 2954.

On vine twigs. Terrington.

L. fuscella, *B. & Br.*, *Sacc. Syll.* 2959 ; *Hdbk.* 2679.

On rose twigs. Twycross, Barnet.

L. vagabunda, *Sacc.*, *Sacc. Syll.* 2963.

On *Salix Babylonica*. Kew.

**** CLYPEOSPLERIA.** *Perithecia clypeate.*

L. Notarisii, *Fckl.*, *Sacc. Syll.* 3189.

On *Rubus* and *Epilobium*. Highgate, Lynn.

L. mamillana, *Fr.*, *Sacc. Syll.* 3190.

On oak. Castle Rising, Leatherhead.

GEN. 9. **DELACOUREA.** *Sporidia muriform, coloured.*

*** PLEOSPORA.** *Asci octosporous.*

D. eustegia, *Cke.*, *Sacc. Syll.* 3759 ; *Hdbk.* 2682.

On willow twigs. Swanscombe, Hampstead.

D. samaræ, *Fckl.*, *Sacc. Syll.* 3785.

On fruit of ash. Forden, Lynn.

SYNOPSIS PYRENOAMYCETUM.

(Continued from Vol. xvii., p. 93.)

Fam. 15. CAULICOLÆ, Fr. S. M. II., 503. Immerso-innatæ, plerumque in caulibus herbarum emortuis obviæ.

GEN. 1. **PHOMATOSPORA**, Sacc. Perithecia tecta v. erumpentia. Sporidia continua, hyalina.

* GENUINA. *Aparaphysati*.

- | | |
|---------------------------------|----------------------------------|
| 4335. Berkeleyi, Sacc. ... 1650 | 4338. molluginis, Mont. 1655 |
| = <i>phomatospora</i> , B. | 4339. argyrostigma, Berk. 1654 |
| 4336. argentina, Sp. ... 1651 | 4340. daticæ, Hark. ... 6382 |
| 4337. ovalis, Pass. ... 1653 | 4341. endopteris, Ph. & Pl. 6383 |

** PHYSALOSPORA. *Paraphysati*.

- | | |
|----------------------------------|---------------------------------------|
| 4342. euphorbiæ, P. & P. 1666 | 4356. phlyctænoides, B. & C. ... 1705 |
| 4343. minutula, S. & S. 1667 | |
| 4344. astragali, Lasch. ... 1668 | 4357. Ludwigia, Cke. ... 1720 |
| 4345. disrupta, B. & C. ... 1672 | 4358. cœnanthes, Cr. ... 1726 |
| 4346. hypericina, B. & C. 1682 | 4359. obionis, Cr. ... 1728 |
| 4347. minutella, Peck. ... 1686 | 4360. geranii, C. & H. ... 6384 |
| 4348. œnothæræ, B. & C. 1687 | 4361. paraguaxa, Sp. ... 6391 |
| 4349. althææ, Kirch. ... 1691 | 4362. corallinarum, Cr. 1727 |
| 4350. eunotia, B. & C. ... 1693 | 4363. hepaticarum, Cr. 1729 |
| 4351. echii, Kirch. ... 1694 | 4364. lecanoræ, Stein. ... 6393 |
| 4352. eupatorii, Kirch. ... 1695 | 4365. collemæ, Stein. ... 6394 |
| 4353. palustris, Mont. ... 1697 | 4366. microthelia, Wallr. 6395 |
| 4354. trochiformis, Pr. 1699 | 4367. psoromoides, Borr. 6396 |
| 4355. atrosplendens, Pr. 1700 | |

GEN. 2. **APIOSPORA**. Perithecia tecta. Sporidia clavato-pyriformia, prope basim uniseptata.

- | | |
|-------------------------------|---------------------------------|
| 4368. Montagnei, Sacc. 2098 | 4371. Lloydii, Cr. ... 2101 |
| = <i>apiospora</i> , Mont. | 4372. inserta, B. & C. ... 2102 |
| 4369. striola, Pass. ... 2099 | 4373. punctum, S. & S. 2103 |
| 4370. parallela, K. ... 2100 | |

GEN. 3. **DIDYMELLA**. Sporidia didyma, hyalina.

* *In Dicotyledoneis*.

- | | |
|----------------------------------|-----------------------------------|
| 4374. vincetoxici, Not. ... 2153 | 4379. megarrhizæ, C. & H. 6478 |
| 4375. effusa, Nssl. ... 2154 | 4380. media, Sacc. ... 2157 |
| 4376. melonis, Pass. ... 6477 | 4381. planiuscula, B. & Br. 2158 |
| 4377. nemoralis, Sacc. ... 2155 | 4382. hæmatites, Rob. ... 2159 |
| 4378. exigua, Nssl. ... 2156 | 4383. hellebori, Chaill. ... 2160 |

4384. <i>eupyrena</i> , <i>Sacc.</i> ...	2161	4398. <i>tosta</i> , <i>B. & Br.</i> ...	2172
4385. <i>hyporrhoea</i> , <i>Sacc.</i>	2162	4399. <i>commanipula</i> , <i>B. &</i>	
4386. <i>operosa</i> , <i>Desm.</i> ...	2163	<i>B.</i> ...	2173
4387. <i>trifolii</i> , <i>Fckl.</i> ...	2164	4400. <i>bryoniae</i> , <i>Fckl.</i> ...	2174
4388. <i>onosmodina</i> , <i>Pk. &</i>		4401. <i>chamaejasmes</i> , <i>Fckl.</i>	6484
<i>Cl.</i> ...	2165	4402. <i>catariae</i> , <i>C. & E.</i> ...	2175
4389. <i>superflua</i> , <i>Fckl.</i> ...	2166	4403. <i>incommisibilis</i> , <i>B.</i>	
4390. <i>inconspicua</i> , <i>Johans.</i>	6481	<i>& C.</i> ...	2176
4391. <i>lathyrina</i> , <i>B. & C.</i>	2167	4404. <i>carduicola</i> , <i>Cke.</i> ...	2177
4392. <i>lupina</i> , <i>C. & H.</i> ...	6482	4405. <i>prominens</i> , <i>Ell. &</i>	
4393. <i>pusilla</i> , <i>Nssl.</i> ...	2168	<i>Ev.</i> ...	7459
4394. <i>intercepta</i> , <i>K. & Cke.</i>	2169	4406. <i>caulicola</i> , <i>Mong.</i> ...	2178
4395. <i>Fuckeliana</i> , <i>Pass.</i>	2170	4407. <i>aggregata</i> , <i>Lasch.</i>	2179
4396. <i>epilobii</i> , <i>Fckl.</i> ...	2171	4408. <i>subexserta</i> , <i>C. & E.</i>	2180
4397. <i>nivalis</i> , <i>Fckl.</i> ...	6483		

** *In Monocotyledoneis.*

4409.	arctica, <i>Ickl.</i>	... 6485	4416.	phacidiomorpha,			
4410.	proximella, <i>K.</i>	... 2181		<i>Ces.</i>	... ..	2187	
4411.	culmigena, <i>Succ.</i>	... 2182	4417.	refracta, <i>Cke.</i>	... .	2188	
4412.	intercellularis, <i>B.</i>		4418.	uberina, <i>Mont.</i>	... .	2189	
	& <i>C.</i>	... .. 2183	4419.	dioscoreæ, <i>B. & C.</i>		2190	
4413.	juncina, <i>B. & Rav.</i>	2184	4420.	eumorpha, <i>B. & C.</i>		2191	
4414.	subgemina, <i>B. & C.</i>	2185	4421.	combulliens, <i>B. & C.</i>		2192	
4415.	Nebraskæ, <i>B. & C.</i>	2186					

_{}* *In Acotyledoneis.*

4422. hyphemis, <i>Cke.</i> ... 2193	4425. sphinctrinodes, <i>Zw.</i> 6486
4423. lophospora, <i>S. & S.</i> 2194	4426. ulothii, <i>Korb.</i> ... 6487
4424. pteridicola, <i>B. & C.</i> 2195	4427. epipolytropa, <i>Mudd.</i> 6488

GEN. 4. **METASPHÆRIA.** Sporidia pluriseptata, hyalina.

A. *In Dicotyledoneis.*

* *Sporidia* 2-4 septata.

4428. bœhmeriae, <i>Rabh.</i>	3401	4440. senecionis, <i>Fckl.</i> ...	3410
4429. thalictri, <i>Wint.</i> ...	3402	4441. metnloidea, <i>K. & C.</i>	3411
4430. ocellata, <i>Nsl.</i> ...	3403	4442. algeriensis, <i>S. & B.</i>	7022
4431. tritorulosa, <i>B. & B.</i>	3404	4443. lathyri, <i>Sacc.</i> ...	3412
4432. annæ, <i>Oud.</i> ...	7019	4444. depressula, <i>S. & R.</i>	7023
4433. rustica, <i>K.</i> ...	3405	4445. atpinis, <i>Karst.</i> ...	3413
4434. trollii, <i>Karst.</i> ...	7020	4446. coniformis, <i>Fckl.</i> ...	3414
4435. rupicola, <i>Sacc.</i> ...	3406	4447. brachiata, <i>K. & C.</i>	3415
4436. xerophila, <i>S. & M.</i>	7021	4448. helianthemî, <i>Ard.</i>	3416
4437. macrospora, <i>Fckl.</i>	3407	4449. scotophilæ, <i>D. R. & M.</i>	3417
4438. ? trichostoma, <i>Pass.</i>	3408	4450. galiorum, <i>R. &</i>	
4439. agminalis, <i>Lev.</i> ...	3409	<i>Desm.</i> ...	3418

- | | |
|--|---|
| 4451. ferulina, <i>D. R. & M.</i> 3419 | 4456. boucera, <i>Cke. & Ell.</i> 3423 |
| 4452. ferulæ, <i>B. & A.</i> ... 7024 | 4457. sacculus, <i>P. & B.</i> ... 3424 |
| 4453. Thwaitesii, <i>B. & Br.</i> 3420 | 4458. kali, <i>Fab.</i> ... 6147 |
| 4454. complanata, <i>Tode.</i> 3421 | 4459. brunnea, <i>Sacc.</i> ... 3427 |
| 4455. rubella, <i>S. & M.</i> ... 3422 | 4460. primulicola, <i>Pat.</i> 7493 |

** *Sporidia* 5-10 septata.

- | | |
|---|---|
| 4461. inulina, <i>D. R. & M.</i> 3425 | 4463. dissiliens, <i>Cke. & Ell.</i> ... 3428 |
| 4462. eburnea, <i>Nsl.</i> ... 3426 | 4464. canadensis, <i>Not.</i> ... 3429 |

B. *In Monocotyledoneis.*

* *Sporidia* 2-3 septata.

- | | |
|--|---|
| 4465. cocogena, <i>Cke.</i> ... 3469 | 4477. avenæ, <i>Avd.</i> ... 3481 |
| 4466. lacustris, <i>Fckl.</i> ... 3470 | 4478. cattanei, <i>S.</i> ... 3482 |
| 4467. neglecta, <i>Nsl.</i> ... 3471 | 4479. panicorum, <i>Cke.</i> ... 3483 |
| 4468. leersiae, <i>Pass.</i> ... 3472 | 4480. recutita, <i>Fr.</i> ... 3484 |
| 4469. discors, <i>S. & E.</i> ... 3473 | 4481. cumana, <i>S. & Sp.</i> 3486 |
| 4470. graminum, <i>Sacc.</i> ... 3474 | 4482. carectorum, <i>B. & C.</i> 3487 |
| 4471. coccodes, <i>K.</i> ... 3475 | 4483. junci, <i>Oud.</i> ... 3488 |
| 4472. culmifida, <i>K.</i> ... 3476 | 4484. palmetta, <i>Cke.</i> ... 3489 |
| 4473. anarithma, <i>B. & Br.</i> 3477 | 4485. iridicola, <i>Sacc.</i> ... 3490 |
| 4474. anarithmoides, <i>S.</i> 3478 | 4486. iridis, <i>Desm.</i> ... 3491 |
| <i>& S.</i> ... 3478 | 4487. ceratotheca, <i>Cke.</i> 6150 |
| 4475. poæ, <i>Sacc.</i> ... 3479 | 4488. marchaliana, <i>Sacc.</i> 7038 |
| 4476. brachypodii, <i>Pass.</i> 3480 | 4489. nigrotingens, <i>Mont.</i> 7492 |

** *Sporidia* plerumque 4 septata.

- | | |
|--|---------------------------------------|
| 4490. craterium, <i>Mont.</i> ... 3492 | 4493. spatharum, <i>Ces.</i> ... 3495 |
| 4491. calamina, <i>D. R. & M.</i> 3493 | 4494. pinnarum, <i>Pass.</i> ... 3496 |
| 4492. Bellyneckii, <i>West.</i> 3494 | |

* * *Sporidia* 5-pluriseptata.

- | | |
|---|--|
| 4495. hyalospora, <i>Sacc.</i> 3497 | 4503. defodiens, <i>Ell.</i> ... 3505 |
| 4496. rachidis, <i>Pass.</i> ... 3498 | 4504. puccinioides, <i>Sp.</i> 3506 |
| 4497. sabuletorum, <i>B. & Br.</i> ... 3499 | 4505. scirpina, <i>Wint.</i> ... 3507 |
| 4498. fusariispora, <i>Mont.</i> 3500 | 4506. Debeauxii, <i>S. & R.</i> 3508 |
| 4499. oryzæ, <i>Catt.</i> ... 3501 | 4507. fur, <i>Ehr.</i> ... 3509 |
| 4500. rimularum, <i>Cke.</i> ... 3502 | 4508. profuga, <i>Ehr.</i> ... 3510 |
| 4501. Roumeguerii, <i>Sacc.</i> 3503 | 4509. Lindsayana, <i>Curr.</i> 6151 |
| 4502. grandispora, <i>Sacc.</i> 3504 | 4510. acorella, <i>Cke.</i> ... 7040 |

C. *In Acotyledoneis.*

- | | |
|--|--|
| 4511. lycopodii, <i>B. & C.</i> 3511 | 4513. epipteridea, <i>C. & H.</i> ... 3513 |
| 4512. plegmariae, <i>Ces.</i> ... 3512 | |

4514. *stercocaulorum*, 4518. *lichenis-sordidi*,
Arn. ... 3514 *Mass.* ... 3518
 4515. *psoræ, Anzi.* ... 3515 4519. *leptogiophila*,
 4516. *lepidotæ, Anzi.* ... 3516 *Minks.*... 7041
 4517. *cetraricola, Nyl.*... 3517

D. CERIOSPORA. *Sporidia* 1-3 septata, mucronata.

4520. *fuscescens, Nsl.* ... 3521 4521. *bonaerensis, Sp.* ... 3522

E. DILOPHIA. *Sporidia* fili-fusoides, pluriseptata, utrinque setifera.

4522. *graminis, Fckl.* ... 4104 4524. *punctata, Wint.* ... 7149
 4523. *sabalensis, Cke.* ... 4105

GEN. 5. **RAPHIDOSPORA.** *Sporidia* filiformia, hyalina.

* *In Dicotyledoneis.*

4525. *rubella, Pers.* ... 4017 4547. *solidaginis, Schw.* 4034
 = *porphyrogona, Tode.* 4548. *stenosporus, Karst.* 7132
 4526. *olivaceus, Ellis* ... 7127 4549. *Matthiæi, West.*... 4035
 4527. *vulgaris, Sacc.* ... 4018 4550. *dictamni, Fckl.* ... 4036
 4528. *urticæ, Rabh.* ... 4019 4551. *hyperici, Rabh.* ... 4037
 4529. *ulnospora, Cke.* ... 4020 4552. *aconiti, Bon.* ... 4038
 4530. *medusæ, E. & E.* 7128 4553. *nigrificans, Cke.*... 4039
 4531. *cesatiana, Mont.*... 4021 4554. *hesperidis, Sacc.*... 4040
 = *echii, Rehm.* 4555. *brachystoma, Sacc.* 4041
 4532. *collapsa, C. & E.* 4022 4556. *brachyascus, Wint.* 4042
 4533. *rudis, Reiss.* ... 4023 4557. *camptospora, Sacc.* 4043
 4534. *claviger, Hark.* ... 7129 4558. *calaminthæ, Pass.* 4044
 4535. *montellica, Sacc.* 4024 4559. *euspora, Sacc.* ... 4045
 4536. *humuli, Karst.* ... 7130 4560. *affinis, Sacc.* ... 4046
 4537. *acuminata, Sow.*... 4025 4561. *spina, Speg.* ... 4047
 4538. *compressa, Rehm.* 4026 4562. *eryngii, Oud.* ... 4048
 4539. *cirsii, Karst.* ... 4027 4563. *vitalbæ, Sacc.* ... 4049
 4540. *incomptus, Nsl.* ... 7131 4564. *tenella, Auers.* ... 4050
 4541. *bardanæ, Fckl.* ... 4028 4565. *characias, Fab.* ... 4051
 4542. *anguillida, Cke.* ... 4029 4566. *persolina, Not.* ... 4052
 4543. *georginæ, Fckl.* ... 4030 4567. *morthuieri, S. & B.* 7133
 4544. *eburnensis, Sacc.* 4031 4568. *adnata, Bon.* ... 4053
 4545. *xanthii, Lasch.* ... 4032 4569. *fulgida, C. & E.*... 4054
 4546. *scolymi, Mont.* ... 4033 4570. *glomus, B. & C.*... 4055

** *In Monocotyledoneis.*

4571. *graminis, Sacc.* ... 4064 4576. *culmorum, Cr.* ... 4069
 4572. *cariceti, B. & Br.*... 4065 4577. *encrypta, B. & Br.* 4070
 4573. *coffæata, Berk.* ... 4066 4578. *leptosperma, Speg.* 4071
 4574. *stictispora, C. & E.* 4067 4579. *helicospora, B. &*
Br. ... 4072

4580. *maritima*, *Sacc.* ... 4073 4583. *œdema*, *Mont.* ... 4076
 4581. *filispora*, *C. & E.* 4074 4584. *compar*, *Karst.* ... 7138
 4582. *verminosa*, *Mont.* 4075 4585. *versisporus*, *E. & M.* 7139

* * * *In Acotyledoneis.*

4586. *peltigerarum*, *Arn.* 7140 4589. *Steinii*, *Korb.* ... 7141
 4587. *peltigeræ*, *Mont.*... 4077 4590. *Korberi*, *Stein.* ... 7142
 4588. *thallicola*, *Not.* ... 4078 4591. *palustris*, *Schr.* ... 7143

** OPHIOCHÆTA. *Peritheciis setulosis.*

4592. *penicillus*, *Schw.* 4079 4595. *chætophora*, *Cr.* ... 4082
 4593. *herpotricha*, *Fr.*... 4080 4596. *incompta*, *Not.* ... 4083
 4594. *pellita*, *Fckl.* ... 4081

*** *Species imperfectæ cognitæ.*

4597. *comata*, *Not.* ... 4084 4599. *isiaca*, *Ces.* ... 4086
 4598. *Hubneri*, *Rabh.* ... 4085 4600. *montagneana*, *Lacr.* 4087

NOTE.—Nos. 4208 to 4214 must be deleted; the species under these numbers having been entered before, and repeated in error.

THE REV. M. J. BERKELEY.

It is with profound regret that we have to announce the death of our esteemed friend and valued coadjutor, the Rev. Miles Joseph Berkeley, M.A., F.R.S. This event took place at Sibbertoft Vicarage, near Market Harborough, on the 30th July, in his 86th year. In all directions we may look for accounts of his long and active life, which his many friends will be anxious to record. His services to mycology in Great Britain cannot be overrated. The book which, perhaps of all others, will be his monument, is the one containing the Fungi in Sir William Hooker's "British Flora," and this was, for about a quarter of a century, the text book for English students. "Outlines of British Fungology," was a more recent work, but it was a publisher's book, and, for the most part, a barren catalogue, which had to be compressed that it should only occupy a given space. If the condition of knowledge of fungi in 1836 be taken into account, it will be seen that the volume of "British Flora" devoted to this subject was fully abreast of the time, and represented a vast amount of earnest and careful work, in face of many difficulties, brought to a successful issue. Read by the light of 1889, the book of 1836 will seem to be very imperfect, but when compared with all which preceded it, it must be acknowledged as a decided advance. Even now it may often be consulted with advantage. Actively working at fungi for more than fifty years, and in constant and familiar correspondence with the veteran Fries, it was to be expected that Berkeley should obtain and maintain the lead in all that concerned mycology in this country. With him the old race of mycologists is extinct. The elder and younger Fries, Mon-

tagne, Trog, Vittadini, Corda, &c., were amongst his correspondents, and to the last he was opposed to any innovations on what they taught, although controversy was his great aversion. He has often expressed himself in our hearing, as one who disliked controversy because it consumed so much time, which might be turned to better account, and which was calculated to raise rather than to assuage ill feeling.

It was surprising, even to his friends, how cyclopædic was his knowledge, whether of the pedigree of a racehorse, or the pedigree of a garden flower, and what a large amount of work he could accomplish. In this he was assisted by an extraordinary memory, and, perhaps, trusted too much to memory in latter years, when it did not possess all its old vigour.

Undoubtedly the "Introduction to Cryptogamic Botany," published in 1857, was a valuable and learned work, but so heavy and compact in style that only very advanced students could make use of it with advantage. Because it was heavy and dull it never got beyond a *first* edition, and *not* because it failed in accuracy or method.

At first, and when a young man, he devoted himself to entomology, but ultimately his principal attention was devoted to the diseases of plants, including fungi, with occasional diversions in favour of British Algae and mosses. It is in connection with fungi that his name will be best known to our readers, and as the "Prince of British Mycologists" his name will go down to posterity. Not until he was past eighty years of age did he wholly abandon his work with fungi, although his Herbarium was sent away in 1879. No absolute estimate could be made of the number of new species of fungi which were first described either by Berkeley alone, or in conjunction with others, during an active half century. An approximation may, perhaps, be made when the last volume of Saccardo's "Sylloge" is published. There are not less than five thousand types in the Berkeley Herbarium, now located in the Herbarium of the Royal Gardens, Kew, and there are other types in the general Herbarium which are not to be found in the Berkeley Herbarium. North American Fungi, contributed by Curtis, Sprague, Ravenal, and others, were for the most part described in the early volumes of this Journal. Ceylon Fungi, contributed by Dr. Thwaites, and in many cases accompanied by coloured drawings, were described in the "Linnean Journal," as were also the Cuban Fungi collected by Wright. The Indian collections, made by Sir J. D. Hooker and others, were published in Hooker's "Journal of Botany." Australian Fungi, contributed by Baron von Mueller, F. M. Bailey, and others, were described in the "Transactions" and the "Journal of the Linnean Society," whilst the Fungi of Tasmania and New Zealand were recorded in Hooker's "Floras" of those countries. Besides the above, and the "Challenger" collections, numerous smaller collections were determined and published from time to time partly in the three series of Hooker's "Journal of Botany" and partly in the "Annals and Magazine of Natural History," the Journal, and

"Transactions of the Linnean Society," and various other scientific journals.

It is unnecessary to go over the ground which has been occupied by the writers of memoirs already issued, or to anticipate those in process of preparation, by a record of the papers he contributed to journals, to learned societies, or to the pages of the "Gardener's Chronicle," in which his well-known initials, "M. J. B.," constantly appeared for about five-and-forty years.

With a kind and genial disposition, a warm heart, and a benevolent presence, he was beloved in his family, in his parish, in the various societies of which he was a member, and, indeed, by all with whom he came in contact, and his death will be regretted in a wide circle, though by no means sudden or unexpected at such a ripe old age.

M. C. C.

MEMORABILIA.

LENTINUS CYATHUS, B. & Br.—The species called *Lentinus scleroticola*, Murray, "Trans. Linn. Soc." II., Part ii., is identical with *Lentinus cyathus*, B. and Br., as determined by authentic specimens of both.

CEREBELLA PASPALI, C. & M.—The species called by Berkeley *Thecaphora inquinans*, from Ceylon, is this species.

CEREBELLA ANDROPOGONIS, Ces.—According to authentic specimen, *Polycystis macularis*, B. & Br., is the same.

TRICHIA FALLAX, Pers.—The specimens issued in Roumeguere's "Fungi Gallici," No. 42, under the name of *Licea circumscissa*, Pers., are the above *Trichia*, as far as our copy is concerned.

AGARICUS (ARMILLARIA) FOCALIS, Fr., var. *GOLIATHUS*.—This splendid *Armillaria* has been found by C. H. Spencer Perceval, Esq., near Morpeth. It seems doubtful whether it should be referred, as a variety, to *Agaricus focalis*, and not maintained as a separate species. In one specimen the pileus was six inches in diameter, and the stem $1\frac{1}{2}$ inches thick and five inches long.

VINE MILDEW.—The following extract from one of Berkeley's letters may be of some interest:—"You are wrong in supposing that Tucker was the first discoverer of the Vine Mildew. He got all his information from myself and Mr. Hoffman, and because he took great pains, and showed considerable intelligence in the matter, the species was named after him by way of encouragement. He was, however, foolish enough afterwards, in a Kentish paper, to throw doubt upon our opinions without any sufficient grounds for doing so. His claims were entirely ignored by the French Government, and £80 out of the money distributed by the French Government was given to a man who was long after Tucker in the application of sulphur, £20 being assigned to me, who was really the originator of the whole matter."

NEW BRITISH FUNGI.

By M. C. COOKE.

*(Continued from Vol. xvii., p. 80.)***Marasmius prasiosmus**, *Fries Hym. Eur.* 468.

Strong scented. Pileus rather membranaceous, tough, campanulate-convex, then flattened, obtuse, rugulose; stem hollow, *pallid above, becoming smooth, thickened downwards*, pallid rufous or fuscous, *somewhat tomentose*; gills adnexed, a little crowded, at first white.

Amongst oak leaves. Scarborough.

Odour of garlic strong and persistent. Pileus becoming whitish, with the disc darker, scarcely an inch in diameter; stem 3 inches long, and a line thick, tough, with the curved dilated base adherent to dead leaves.

Marasmius torquescens, *Quelet, Fr. Hym. Eur.* 471.

The specimens in Herb. Berkeley from Glamis, referred to this species, are found to have brown spores, and to be really some small species of *Naucoria*. So that the Scotch locality is an error, supposing these specimens to have been the authority, which it is presumed that they were.

Arcyria dictyonema, *Rost. Mon.* 279.

Peridia ovate, stipitate; stems arising from a substratum; capillitium not very much divided, formed of cylindrical tubes, of varied dimensions, usually 3-5 μ thick, projections formed by rigid spinose prickles 1-7 μ high, these spines being joined in a reticulation at the base. Spores even, 9-10 μ diam.

On rotten wood. Smethwick (A. Camm).

Above is the diagnosis, as given by Rostafinski, reproduced by Saccardo (*Syll.* vii., p. 431), but our specimens differ in scarcely being stipitate, in the colour being olive, in the threads of the capillitium being as thick as the spores, in the projections not being spines, but merely the edges of the reticulations, and in the spores not being entirely even, but minutely warted.

Strumella strobilina, *Cke. & Mass.*

Pustules gregarious, erumpent, rather prominent, almost globose, black ($\frac{1}{4}$ mm. diam). Hyphæ simple, or furcate, filiform. Conidia fusiform, uniseptate, acute at both ends, sooty olive ($15-17 \times 2\frac{1}{2} \mu$).

On fir cones. Newcastle.

Glæosporium Pelargonii, *Cke. & Mass.*

Hypophyllum. Acervulis sparsis, bullatis, pallidis. Conidiis tereti-oblongis, utrinque rotundatis, hyalinis, $20 \times 4-5 \mu$.

On living leaves of ivy-leaf Pelargoniums. Kew.

REVISION OF THELEPHOREÆ.

The first part of Mr. Masee's revision of the *Thelephoreæ* includes four genera, viz.:—*Heterobasidium*, with one species; *Coniophora*, with 49 species; *Peniophora*, with 48 species; and *Asterostroma*, with five species. The following are those related to the British Flora:—

- Coniophora olivacea*, Cooke *Grev. viii.* 89.
- Coniophora pulverulenta*, Cooke *Grev. viii.* 89.
- Coniophora puteana*, Cooke *Grev. viii.* 88.
- Coniophora cinnamomea*, Mass. p. 130.
- Coniophora umbrina*, Mass. p. 131.
- Coniophora incrustans*, Mass. p. 132.
- Coniophora arida*, Karst. *M. F.* 319.
- Coniophora sulphurea*, Mass. p. 132.
- Coniophora subdealbata*, Mass. p. 135.
- Coniophora Berkeleyi*, Mass. p. 135.
- Coniophora Cookei*, Mass. p. 136.
- Coniophora ochracea*, Mass. p. 137.
- Coniophora membranacea*, Cooke *Grev. viii.* 89.
- Peniophora quercina*, Cooke *Grev. viii.* 20.
- Peniophora pezizoides*, Mass. p. 141.
- Peniophora gigantea*, Mass. p. 142.
- Peniophora limitata*, Cooke *Grev. viii.* 20.
- Peniophora rosea*, Mass. p. 146.
- Peniophora incarnata*, Mass. p. 147.
- Peniophora cinerea*, Cooke *Grev. viii.* 20.
- Peniophora pubera*, Mass. p. 149.
- Peniophora ochracea*, Mass. p. 150.
- Peniophora scotica*, Mass. p. 152.
- Peniophora velutina*, Cooke *Grev. viii.* 21.
- Peniophora rimosa*, Cooke *Grev. ix.* 94.
- Peniophora terrestris*, Mass. p. 153.
- Peniophora hydroides*, Cke. & Mass. p. 154.

Entirely new species, now first described, are:—

Coniophora incrustans, Mass. Effused, thin, indeterminate, hymenium subtomentose, pallid; spores very pale ochre, $15-17 \times 8-10 \mu$.

Running over leaves and twigs. Apethorpe.

Coniophora Berkeleyi, Mass. Effused, thick, determinate; hymenium brown, becoming purplish, cracked, interstices silky; spores ellipsoid, apiculate at the base, tawny ($12 \times 8 \mu$).

On decorticated wood. (*Herb. Berk.* 3982a.)

Coniophora Cookei, Mass. Effused, fibrillose, membranaceous, circumference byssoid, pallid; hymenium olive-ferruginous, pulverulent; spores elliptic, ochre ($10 \times 6 \mu$).

On rotting wood.

Coniophora ochracea, *Mass.* Very broadly effused, somewhat membranaceous, indeterminate; hymenium pulverulent, ochraceous, spores yellowish, subglobose ($8 \times 6-7 \mu$).

Inside elm bark. Kew.

Peniophora pezizoides, *Mass.* Rather coriaceous, cup-shaped then expanded, fixed at the centre, externally pallid and villose; hymenium ochraceous, velvety, continuous; cystidia fusoid, rounded at the apex, acute at the base ($50-60 \times 20 \mu$). Spores globose, $4-5 \mu$.

On branches of horse-chestnut. Kew.

Peniophora scotica, *Mass.* Broadly effused, margin fibrillose radiate; hymenium cinnamon, velvety; cystidia sub-cylindrical ($80-120 \times 15-20 \mu$). Spores ellipsoid, $8-10 \times 6-7 \mu$.

Inside bark. Scotland (*Herb. Berk.* 3995a.)

Peniophora hydroides, *Cke & Mass.* Broadly effused, thin, rather innate, indeterminate; hymenium cinereous; cystidia cylindrical-fusoid ($70-120 \times 12-14 \mu$). Spores globose, $4-5 \mu$.

On bark. Carlisle.

FUNGUS FORAYS, 1889.

CRYPTOGAMIC SOCIETY OF SCOTLAND.—The fifteenth annual conference will be held at Crieff, Perthshire, on Tuesday, the 17th September, at 10 a.m., and following days. Members will learn the place of meeting at any of the Hotels on their arrival.

WOOLHOPE FIELD CLUB.—The annual meeting of this Club for Fungus Forays will take place as usual during the first week in October. The neighbourhood of Ludlow has been selected for the excursions of the first two days. The short excursion for the Thursday will probably be made to Dinmore, returning in time for the annual dinner.

HAMPSHIRE FIELD CLUB.—Forays for two days are being organized to take place in the New Forest, but the time has not yet been definitely fixed.

ESSEX FIELD CLUB.—The arrangements for the annual Forays in Epping Forest are not completed, or the date fixed, on account of the uncertainty of the weather. Probably some time in October will be selected.

HACKNEY NATURAL HISTORY SOCIETY.—Proposals are being entertained for a day excursion in Epping Forest on a Saturday near the middle of September, but the precise date has not at present been decided upon, probably the 14th.

Other societies, which in previous years have organized small local Forays, at present have made no sign, although it seems probable that comparatively early dates would this year have a better prospect of success than later ones.

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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

NEW AUSTRALIAN FUNGI.

By M. C. COOKE.

(Continued from p. 8.)

***Agaricus (Pholiota) recedens**, Cke. & Mass.

Pileo carnosulo, convexo-expanso, subumbonato, glabro, sicco, aureo-fulvo, disco obscuriori (circa 1 unc. diam.), margine tenui, demum striatulo; stipite elongato, cylindrico, æquali (3-4 unc. long, 2 lin. crass.), pileo concolori, vel deorsum obscuriori, annulo amplo, patulo, distante medio; lamellis adnatis, subdistantibus, ventricosis, tenuibus, cinnamomeis. Sporis acuminato-ellipticis, læte fuscis, $9 \times 5 \mu$.

On the ground. Mordiallac, Victoria. (C. French.)

Allied closely to *Ag. togularis*, Bull.

Craterellus multiplex, Cke. & Mass.

Stem slender, erect, rugose (2in. long, 2 lin. thick). Pilei reniform or obovate, attached at the base to the stem, in a series of five or six, superimposed ($\frac{1}{2}$ - $\frac{3}{4}$ in. broad), sub-membranaceous, depressed behind, smooth, ochraceous, margin a little incurved, thin, hymenium flesh colour, longitudinally rugose. Spores $3\frac{1}{2} \mu$ diam. globose, very numerous, hyaline.

On the ground. Derwent River, Tasmania.

Seismosarca, Cooke (Genus nova).

Tremelloid, very soft and quaking, subglobose, lobate, or gyrose, sessile, covered everywhere by the hymenium. Basidia clavate. Spores continuous, coloured.

Seismosarca hydrophora, Cooke.

Inflated, gelatinous, lobate (2-3in. broad), dingy pale, fuliginous, very soft and watery, covered with scattered coloured hairs, which are usually furcate at the base ($50-60 \times 8 \mu$), pointed at the apex. Basidia clavate, spores elliptic, continuous, bright brown, $7 \times 4 \mu$.

On wood. Clarence River, Australia. (Willcox.)

Texture and appearance of *Tremella*, but with different basidia, and coloured spores.

Scleroderma aurea, *Massee*.

Peridium globose, thick, smooth, or minutely verruculose, yellowish-olive, with the flesh bright yellow, tapering below into a very short, stem-like base, running into a dense mass of branched, cord-like, bright yellow mycelium. Capillitium yellowish olive, dense, elastic, spores number in the mass, with an olive tinge, globose, smooth, $5\ \mu$ diam.

On the ground. New Guinea.

Scleroderma australe, *Massee*.

Subglobose, sessile, subpubescent below. Peridium thick, almost even, externally minutely furfuraceous or felty, dirty-ochre, with a rooting base, which is short, abrupt, and fibrous. Internally with very indistinct areolae, mass of spores (without definite capillitium), purple-brown; spores globose, sparsely and minutely verruculose, $6-7\ \mu$.

On soil. Endeavour River, Queensland. (*Persieky*.)

***Spinellus gigasporus**, *Cke. & Mass.*

Hyphis sporangiferis simplicibus, decumbentibus, olivaceo nitentibus, continuis ($40-45\ \mu$ crass.). Sporangii subglobois, polysporis ($220-250\ \mu$ diam.), columella cylindrica, apice rotundata ($140-150 \times 90-100\ \mu$). Sporis elongato-ellipsoideis, olivaceis ($50-60 \times 13-15\ \mu$). Hyphis zygosporiferis flexuosis tenuioribus, obscurioribus, septatis, zygosporio compresso-globois, rugulosis, atrofusco ($70-80 \times 55-60\ \mu$). Rami zygosporia arcuati, laevi, nec spinulosi.

On decaying Agarics. Mordiallae, Victoria. (*C. French*.)

NEW BRITISH FUNGI.

(Continued from p. 20.)

Agaricus (Collybia) floccipes, *Fr. Hym. Eur.* 116.

Pileus rather fleshy, campanulate, then convex, umbonate, even, silky, becoming pale; stem fistulose, straight, rooting, pallid, rough with floccose punctiform black squamules; gills adnexed, ventricose, rather distant, thick, white.—*Cooke Illus. Suppl.*

In a stump. Leigh Woods. (*C. Bucknall*.)

With the habit of *Mycena*.

Paxillus (Lepista) Alexandri, *Gillet Hym. Fr.*

Pileus fleshy, compact, plane, then depressed, dry, unpolished, fawn colour, margin closely involute, becoming flattened and faintly striate; stem stout; gills rather decurrent, crowded, colour of box wood.—*Fr. Hym. Eur.* 402. *Cooke Illus. Suppl.*

On the ground. Theydon Bois.

Pileus 2-3 inches broad. Stem short and thick. Flesh white, turning yellow. Spores whitish. Resembling in appearance small discoloured *L. villereus*, with dark gills. Spores $7-8 \times 4\ \mu$.

Marasmius (Mycena) actinophorus, B. & Br. *Ceylon Fungi* No. 385.

Pileus 2 to 3 lines across, plane, smooth, even, pale ochre, disc purple, with radiating lines of the same colour, very thin. Stem 1 inch long, straight, equal, thread-like, polished, brownish red, curved at the base. Gills few, rather broad, subdecurrent, with shorter ones between, distant, not anastomosing nor connected by veins, pallid. Spores sphaerical.—*Cooke Illus. t. 1136 B.*

On naked soil. Kew Gardens.

Rhinotrichum aureum, Cke. & Mass.

Broadly effused, overrunning the entire matrix, bright golden orange. Sterile threads, creeping, branched, thin, septate. Fertile threads, erect, simple or dichotomous, septate (12-15 μ diam.), ultimate joint papillate with obtuse warts. Conidia ovate-elliptical, clustered at the apices in subglobose heads. 18-20 \times 10-12 μ .

On decayed *Paxillus*. Epping Forest.

Trichia purpurascens, Nyl.

Sporangia stipitate, ovate or spherico-ovate, solitary or gregarious, purplish-red, opaque; stem longitudinally wrinkled, erect or cernuous, rather firm and thickish, expanding at the base into a small hypothallus, coloured like the sporangium, which it equals or exceeds in length; mass of elaters and spores bright ochraceous; elaters rather short, fusiform, attenuated at each end into a very long, tapering, smooth, straight, or flexuous apiculus, spirals rather prominent and distant, about 5 μ thick at the centre, simple or branched; spores globose, verruculose, yellow, 9-11 μ diameter.—*Nyl., in Sällsk. pro Faun. et Flor. Fenn., notis. Ny., Ser. H, I., (p. 126; Mass. Rev. Trich., p. 332; Sacc. Syll. 1508.)*

On moss. Carlisle. (*Dr. Carlyle.*)

Very nearly approaching some forms of *Trichia fragilis*, from which it differs more especially in the distant, prominent, sharp edged and not flattened spiral bands on the elaters. The inner surface of the sporangial wall is studded with purple organic lumps; these, however, are met with in some undoubted forms of *T. fragilis*.

Hemiarcyria Bucknallii, Mass.

Sporangia sessile on a broad or narrow base, seated on a very thin hypothallus, circular, reniform, or subangular from mutual pressure, wall very thin, gilvo-ochraceous, soon disappearing; mass of spores orange; capillitium well developed, threads combined to form a wide meshed network with many free ends, 4-5 μ thick, walls with annular ridges mostly crowded, but here and there scattered, and sometimes passing into a spiral, the ridges with numerous thin, straight spines 3-4 μ long, the free tips irregularly swollen and bristling with spines, as are also certain interstitial swollen portions; spores globose, pale yellow, minutely warted, 7-9 μ diameter.

On wood. Bristol. (*C. Bucknall.*)

Generally crowded, about .5 mm. diameter, but extending to 1.5 mm. when isolated and elongated. Most closely allied to *H. Wigandi*, Rost., but at once distinguished by the larger size of the sporangia, the markings on the elaters being in the form of rings and not spirals, and in being furnished with numerous spines.

SYNOPSIS PYRENOMYCETUM.

(Continued from p. 17.)

GEN. 6. **ANTHOSTOMELLA.** Sporidia continua, fuliginea.

* EUANTHOSTOMELLA. Sporidia muticis.

† In *Dicotyledoneis*.

4601. nigrotecta, <i>B.</i> ♂	4604. chionostoma, <i>D. R.</i>
<i>Rav.</i> ... 1054	♂ <i>M.</i> ... 1061
4602. intybi, <i>D. R.</i> ♂ <i>M.</i> 1059	4605. Africana, <i>K.</i> ♂ <i>C.</i>
4603. baptisiae, <i>Cke.</i> ... 1061	1081, 6324

†† In *Monocotyledoneis*.

4606. punctulata, <i>Rob.</i> ... 1028	4621. eliminata, <i>B. & C.</i> 1040
4607. minima, <i>Sacc.</i> ... 1029	4622. smilacis, <i>Fab.</i> ... 1041
4608. lugubris, <i>Desm.</i> ... 1030	4623. sepelibilis, <i>B. & C.</i> 1042
4609. nitidissima, <i>D. R.</i>	4624. smilacinina, <i>Ph.</i> ... 1043
♂ <i>M.</i> ... 1031	4625. sphaeroidea, <i>Speg.</i> 1044
4610. nigroannulata, <i>B. & C.</i> ... 1032	4626. paraguayensis, <i>Speg.</i> ... 6319
4611. yuccae, <i>Thum.</i> ... 1033	4627. tomicum, <i>Lév.</i> ... 1045
4612. phaeosticta, <i>Berk.</i> 1034	4628. tumulosa, <i>Rob.</i> ... 1046
4613. palmicola, <i>Ard.</i> 6318	4629. consanguinea, <i>Ces.</i> 1047
4614. contaminans, <i>D. R.</i>	4630. Trabutianna, <i>S.</i> ♂
♂ <i>M.</i> ... 1035	<i>R.</i> ... 1048
4615. pisana, <i>Pass.</i> ... 1036	4631. parmula, <i>Lév.</i> ... 1049
4616. Mœleriana, <i>Winter</i> 7435	4632. elivulosa, <i>Mont.</i> ... 1050
4617. platensis, <i>Speg.</i> ... 1037	4633. ruscii, <i>Fab.</i> ... 5925
4618. Puiggarii, <i>Speg.</i> ... 1038	4634. leucobasis, <i>E. & M.</i> 5926
4619. tenacis, <i>Cooke</i> ... 1039	4635. sabalensioides, <i>E.</i>
4620. phormicola, <i>Cooke</i> 6323	♂ <i>M.</i> ... 5932

** EXTOSORDARIA. Sporidia appendiculata.

4636. confusa, <i>Sacc.</i> ... 1065	4640. scotina, <i>D. R. & M.</i> 1071
= <i>appendiculosa</i> , <i>B. & C.</i>	4641. unguiculata, <i>Mont.</i> 1072
4637. rostrispora, <i>Ger.</i> ... 1068	4642. italica, <i>S. & S.</i> ... 1073
4638. achira, <i>Speg.</i> ... 1069	4643. bambusae, <i>Lév.</i> ... 1074
4639. mirabilis, <i>Speg.</i> ... 1070	4644. tomicoides, <i>Sacc.</i> 1076

* * DESCISCENTES. *Ostiola nulla maculata.*

4645. sulcigena, <i>Mont.</i>	1082	4650. caulicola, <i>Ces.</i>	1091
4646. stegophora, <i>M.</i>	1083	4651. duplex, <i>Cr.</i>	1092
4647. oblectans, <i>Ces.</i>	1084	4652. visci, <i>Kalch.</i>	1094
4648. acanthina, <i>M.</i>	1089	4653. Steinheilii, <i>M.</i>	1095
4649. pandani, <i>Rab.</i>	1090		

GEN. 7. **DIDYMOSPHERELLA.** Sporidia didyma, fuliginea.* EUDIDYMA. *Epidermide non nigrificata.*

4654. conoidea, <i>Nsl.</i>	2644	4671. trachodes, <i>Mont.</i>	2672
4655. Schroteri, <i>Nsl.</i>	2645	4672. longipes, <i>Trab.</i>	7468
4656. Winteri, <i>Nsl.</i>	2646	4673. yuccogena, <i>Cke.</i>	2673
4657. parnassiae, <i>Peck.</i>	2647	4674. lusitanica, <i>Nsl.</i>	6580
4658. zerbina, <i>Not.</i>	2648	4675. palmacea, <i>C. & H.</i>	1085
4659. diplodioides, <i>Cr.</i>	2649	4676. arundinicola, <i>Bizz.</i>	6581
4660. pardalnia, <i>E. & E.</i>	7467	4677. rhytidosperma,	
4661. maritima, <i>Cr.</i>	2650	<i>Speg.</i>	6532
4662. Vizeana, <i>Cke.</i>	2651	4678. spatharum, <i>Wint.</i>	6583
4663. adelphica, <i>Cke.</i>	2652	4679. typhæ, <i>Peck.</i>	6584
4664. sellæ, <i>Bagn.</i>	2656	4680. palustris, <i>B. & Br.</i>	2674
4665. circinans, <i>Hark.</i>	6585	4681. peltigeræ, <i>Fckl.</i>	2675
4666. empetri, <i>Fr.</i>	2657	4682. infestans, <i>Speg.</i>	2676
4667. anaxæa, <i>Sacc.</i>	2669	4683. bryonthæ, <i>Arn.</i>	6588
4668. polysticta, <i>B. & C.</i>	2670	4684. microstictica,	
4669. serrulata, <i>E. & M.</i>	6575	<i>Leight.</i>	6589
4670. smaragdina, <i>Ces.</i>	2671	4685. sporastatiæ, <i>Anzi.</i>	6591

* * MICROTHELIA. *Epidermide nigrificata.*

4686. brunneola, <i>Nsl.</i>	2678	4690. appendiculosa,	
4687. meretrix, <i>M.</i>	2679	<i>Speg.</i>	2686
4688. galiorum, <i>Fckl.</i>	2683	4691. nubecula, <i>Pass.</i>	2696
4689. tenebrosa, <i>B. & Br.</i>	2685	4692. donacina, <i>Nsl.</i>	2697
		4693. minuta, <i>Nsl.</i>	2698
		4694. Santeri, <i>Korb.</i>	6590

GEN. 8. **HEPTAMERIA.** Sporidia pleuriseptata.I. LEPTOSPHERIA. *Sporidia articulis homogeneis.*A. In *Dicotyledoneis.*† *Sporidia 2-3 septata.** *Perithecia glabra.*

4695. doliolum, <i>Pers.</i>	2895	4700. dumetorum, <i>Nsl.</i>	2899
4696. conoidea, <i>Not.</i>	2896	4701. demissa, <i>Nsl.</i>	6648
4697. suffulta, <i>Nees.</i>	2897	4702. obesula, <i>Sacc.</i>	2900
4698. acanthi, <i>Pat.</i>	7477	4703. bocconiae, <i>C. & E.</i>	2901
4699. subconica, <i>C. & P.</i>	2898	4704. argentina, <i>Speg.</i>	2902

4705. leptospora, <i>Not.</i>	2903	4732. inculta, <i>Sacc.</i>	... 2925
4706. clivensis, <i>B. & Br.</i>	2904	4733. aparines, <i>Fekl.</i>	... 2926
4707. libanotis, <i>Fekl.</i>	2905	4734. galiicola, <i>Sacc.</i>	... 2927
4708. Longchampsi,		4735. galiorum, <i>Sacc.</i>	... 2928
<i>West.</i> ...	6650	4736. muralis, <i>Sacc.</i>	... 2929
4709. consessa, <i>C. & E.</i>	2906	4737. promontorii, <i>Sacc.</i>	2930
4710. ophioboloides, <i>S.</i>	6651	4738. Sarraziniana, <i>Sacc.</i>	6656
4711. rudbeckiae, <i>K.</i>	... 2907	4739. pyrenopezizoides,	
4712. rothomagensis,		<i>S. & S.</i>	... 2931
<i>Sacc.</i> ...	... 2908	4740. parietariae, <i>Sacc.</i>	... 2932
4713. sibirica, <i>Thum.</i>	... 2909	4741. salicaria, <i>Pass.</i>	... 2933
4714. viridella, <i>Peck.</i>	... 2910	4742. circinans, <i>Fekl.</i>	... 3183
4715. dioica, <i>Mong.</i>	... 2911	4743. agminalis, <i>S. & M.</i>	2934
4716. distributa, <i>C. & E.</i>	2912	4744. Weberi, <i>Oud.</i>	... 6657
4717. Harknessiana, <i>C.</i>		4745. aconiti, <i>Sacc.</i>	... 2935
<i>& E.</i> ...	... 6652	4746. obiones, <i>Cr.</i>	... 2936
4718. medicaginis, <i>Fekl.</i>	2915	4747. capparidis, <i>Pass.</i>	2937
4719. pratensis, <i>S. & B.</i>	6653	4748. euphorbiae, <i>Nsl.</i>	... 2938
4720. subcaespitosa, <i>C. &</i>		4749. corallorhizae, <i>Peck.</i>	6658
<i>H.</i> ...	... 6654	4750. cruenta, <i>Sacc.</i>	... 2939
4721. Niessleana, <i>Rab.</i>	... 2917	4751. rubicunda, <i>Rehm.</i>	2940
4722. sodomaea, <i>Not.</i>	... 2918	4752. diaporthoides,	
4723. oreophiloides, <i>S. &</i>		<i>Wint.</i> ...	... 6659
<i>P.</i> ...	... 2919	4753. glaeospora, <i>B. & C.</i>	2941
4724. salebrosa, <i>Pr.</i>	... 2920	4754. molybdina, <i>Mont.</i>	2942
4725. conferta, <i>Nsl.</i>	... 2921	4755. Nitschkei, <i>Rehm.</i>	2943
4726. nigrella, <i>Rab.</i>	... 2922	4756. purpurea, <i>Rehm.</i>	6126
4727. solani, <i>Romell</i>		4757. cucurbitarioides,	
4728. Delawayi, <i>Pat.</i>	... 6672	<i>Fab.</i> ...	... 6127
4729. olericola, <i>B. & C.</i>	2923	4758. lecanora, <i>Fab.</i>	... 6128
4730. anthelmintica, <i>Cke.</i>	2924	4759. eryngii, <i>Fab.</i>	... 6129
4731. eutypoides, <i>Peck.</i>	6655	4760. platanicola, <i>Howe</i>	6130

** *Perithecia hirtella.*

4761. echinops, <i>Hazs.</i>	... 2964	4763. eriophora, <i>Cke.</i>	... 3181
4762. comatella, <i>C. & E.</i>	2965	4764. echinella, <i>Cke.</i>	... 3182

†† *Sporidia 5 septata.*

* *Perithecia glabra.*

4765. planinscula, <i>K.</i>	... 2966	4772. Mertensiae, <i>Ellis</i>	2972
4766. helminthospora,		4773. bardanae, <i>Wallr.</i>	... 2973
<i>Ces.</i> ...	... 2967	4774. gnaphalii, <i>West</i>	... 2974
4767. artemisiae, <i>Fekl.</i>	... 2968	4775. caespitosa, <i>Nsl.</i>	... 2975
4768. Sydowiana, <i>Rehm.</i>		4776. medicaginum, <i>Sacc.</i>	2976
4769. Owaniae, <i>K. & Cke.</i>	2969	4777. maculans, <i>Desm.</i>	... 2977
4770. mirabilis, <i>Nsl.</i>	... 2970	4778. virginica, <i>C. & E.</i>	2978
4771. ogilviensis, <i>B. & Br.</i>	2971	4779. haematites, <i>Desm.</i>	2981

4780. striata, <i>Winter</i> ...	2982	4788. scotophila, <i>Sacc.</i> ...	2989
4781. hyperici, <i>Winter</i> ...	2983	4789. nigricans, <i>K.</i> ...	2990
2782. eranthemi, <i>Pat.</i> ...	7479	4790. tenera, <i>Ellis</i> ...	2991
4783. cylindrospora, <i>Awd.</i>	2984	4791. Mulleri, <i>D. By.</i> ...	2992
4784. phyteumatis, <i>Fckl.</i>	2985	4792. Winter, <i>Nsl.</i> ...	6131
4785. psilospora, <i>Awd.</i> ...	2986	4793. cynops, <i>Fab.</i> ...	6132
4786. sarmenticia, <i>S.</i> ...	2987	4794. fœniculacea, <i>Fab.</i>	6133
4787. sapeyensis, <i>Sacc.</i>	2988		

** *Perithecia setulosa.*

4795. appendiculata, <i>Pr.</i>	2993	4797. spectabilis, <i>Nsl.</i> ...	2995
4796. modesta, <i>Desm.</i> ...	2994	= <i>penicillus</i> , <i>S...</i>	

††† *Sporidia 6-16 septata.*

4798. agnita, <i>Desm.</i> ...	2996	4809. Castagnei, <i>D. R. &</i>	
4799. acuta, <i>Mong.</i> ...	2997	<i>M.</i> ...	3005
= <i>conformis</i> , <i>Fr.</i>		4810. cadubriæ, <i>Speg.</i> ...	3006
4800. multiseptata,		4811. scapophila, <i>Peck.</i>	3007
<i>Winter</i> ...	6134	4812. clavigera, <i>C. & E.</i>	3008
4801. derasa, <i>B. & Br.</i> ...	2998	4813. Kalmusii, <i>Nsl.</i> ...	3009
4802. pellita, <i>Rab.</i> ...	2999	4814. cercispora, <i>K. & C.</i>	3010
4803. plumbaginis, <i>Pat.</i>	7480	4815. dolioloides, <i>Awd.</i>	3011
4804. torulispora, <i>Cke.</i>	3000	4816. drabæ, <i>Nyl.</i> ...	3012
4805. megalospora,		4817. millefolii, <i>Fckl.</i> ...	3013
<i>Awd.</i> ...	3001	4818. massarioides, <i>S & S.</i>	3014
4806. ptarmicæ, <i>K.</i> ...	3002	4819. napi, <i>Fckl.</i> ...	3015
4807. Saccardiana, <i>Fab.</i>	3003	4820. nectrioides, <i>Sp.</i> ...	3016
4808. anthostomoides,		4821. petiolicola, <i>Sacc.</i> ...	3017
<i>Rehm.</i> ...	3004	4822. Thielensii, <i>West.</i>	3018
		4823. aucta, <i>Nsl.</i> ...	3019

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4824. carpogena, <i>Sacc.</i> ...	3057	4829. carpophila, <i>Sacc.</i> ...	3062
4825. lunariæ, <i>B. & Br.</i> ...	3058	4830. bractearum, <i>Sacc.</i>	3063
4826. endiusæ, <i>Fckl.</i> ...	3059	4831. antophila, <i>S. & S.</i>	3064
4827. scrophulariæ, <i>Desm.</i>	3060	4832. fimiseda, <i>Wint.</i> ...	3065
4828. impressa, <i>Preuss.</i>	3061		

C. In *Monocotyledoneis.*† *Sporidia 2-4 septata.*

4833. Michotii, <i>West.</i> ...	3066	4838. marram, <i>Cke.</i> ...	3070
= <i>biseptata</i> , <i>Awd.</i>		4839. orthogramma, <i>B. &</i>	
= <i>trimera</i> , <i>Sacc.</i>		<i>C.</i> ...	3071
4834. punctoidea, <i>Karst</i>	6674	4840. sorgophila, <i>Peck.</i>	3072
4835. vagans, <i>K.</i> ...	3067	4841. Leersiana, <i>Sacc.</i> ...	3073
4836. personata, <i>Nsl.</i> ...	3068	4842. ischaemi, <i>Pass.</i> ...	3074
4837. microscopica, <i>K.</i> ...	3069	4843. eustoma, <i>Fr.</i> ...	3075

4844. <i>customoides</i> , <i>Sacc.</i> ... 3076	4865. <i>juncina</i> , <i>Awd.</i> ... 3094
4845. <i>customella</i> , <i>Sacc.</i> ... 3077	4866. <i>hysterioides</i> , <i>E. & E.</i> ... 6676
4846. <i>crastophila</i> , <i>Sacc.</i> ... 3078	4867. <i>lamprocarpi</i> , <i>Pass.</i> ... 3095
4847. <i>salvinii</i> , <i>Catt.</i> ... 3079	4868. <i>juncicola</i> , <i>Rehm.</i> ... 3096
4848. <i>tritici</i> , <i>Gar.</i> ... 3080	4869. <i>junciseda</i> , <i>K.</i> ... 3097
4849. <i>arundinacea</i> , <i>Sow.</i> ... 3081	4870. <i>hydrophila</i> , <i>Sacc.</i> ... 3098
4850. <i>donacina</i> , <i>S.</i> ... 3082	4871. <i>heterospora</i> , <i>Not.</i> ... 3099
4851. <i>setulosa</i> , <i>S. & R.</i> ... 3083	4872. <i>infernalis</i> , <i>Nsl.</i> ... 6677
4852. <i>marina</i> , <i>E. & E.</i> ... 6675	4873. <i>translucens</i> , <i>Wint.</i> ... 6678
4853. <i>micropogon</i> , <i>Sacc.</i> ... 3084	4874. <i>dasyliirii</i> , <i>Rab.</i> ... 3100
4854. <i>apogon</i> , <i>Sacc.</i> ... 3085	4875. <i>ophiopogonis</i> , <i>Sacc.</i> ... 3101
4855. <i>typharum</i> , <i>Desm.</i> ... 3086	4876. <i>oreophila</i> , <i>Sacc.</i> ... 3103
4856. <i>typhæ</i> , <i>Karst.</i> ... 3087	4877. <i>parvula</i> , <i>Nsl.</i> ... 3104
4857. <i>elæospora</i> , <i>Sacc.</i> ... 3088	4878. <i>phormicola</i> , <i>C. & H.</i> ... 6679
4858. <i>cyperina</i> , <i>Pass.</i> ... 3089	4879. <i>scabiens</i> , <i>Ces.</i> ... 3105
4859. <i>epicarecta</i> , <i>Cke.</i> ... 3090	4880. <i>smilacis</i> , <i>Cast.</i> ... 3106
4860. <i>hemicypta</i> , <i>Oud.</i> ... 7482	4881. <i>triglochlinicola</i> , <i>Curr.</i> ... 3107
4861. <i>gigaspora</i> , <i>Nsl.</i> ... 3091	4882. <i>ammophilæ</i> , <i>Lasch.</i> ... 4521
4862. <i>caricinella</i> , <i>K.</i> ... 3092	
4863. <i>sabalicola</i> , <i>Ellis</i> ... 6135	
4864. <i>luzulæ</i> , <i>Winter</i> ... 3093	

†† *Sporidia* 5 septata.

4883. <i>sticta</i> , <i>E. & E.</i> ... 6680	4896. <i>riparia</i> , <i>Sacc.</i> ... 3120
4884. <i>nigrans</i> , <i>Desm.</i> ... 3108	4897. <i>clara</i> , <i>Cke.</i> ... 3121
4885. <i>licatensis</i> , <i>Sacc.</i> ... 3109	4898. <i>carieis</i> , <i>Schr.</i> ... 3122
4886. <i>culmicola</i> , <i>Fr.</i> ... 3110	4899. <i>vectis</i> , <i>B. & Br.</i> ... 3123
4887. <i>Fuckelii</i> , <i>Nsl.</i> ... 3111	4900. <i>rusci</i> , <i>Wallr.</i> ... 3124
4888. <i>Rouselliana</i> , <i>Desm.</i> ... 3112	4901. <i>obtusispora</i> , <i>Speg.</i> ... 3125
4889. <i>insignis</i> , <i>K.</i> ... 3113	4902. <i>spartinae</i> , <i>E. & E.</i> ... 6681
4890. <i>luctuosa</i> , <i>Nsl.</i> ... 3114	4903. <i>lineolaris</i> , <i>Nsl.</i> ... 6682
4891. <i>nardi</i> , <i>Fr.</i> ... 3115	4904. <i>typhiseda</i> , <i>S. & B.</i> ... 6683
4892. <i>albopunctata</i> , <i>West</i> ... 3116	4905. <i>pachycarpa</i> , <i>S. & M.</i> ... 6684
4893. <i>epicalamia</i> , <i>Riess</i> ... 3117	4906. <i>rhodophæa</i> , <i>Bizz.</i> ... 6685
4894. <i>maritima</i> , <i>C. & Pl.</i> ... 3118	4907. <i>hierochloæ</i> , <i>Oud.</i> ... 6686
4895. <i>norfolcia</i> , <i>Cke.</i> ... 3119	4908. <i>præclara</i> , <i>Karst</i> ... 6687

††† *Sporidia* 6-16 septata.

4909. <i>culmifraga</i> , <i>Fr.</i> ... 3126	4919. <i>asparagina</i> , <i>Karst</i> ... 6689
4910. <i>amphibola</i> , <i>Sacc.</i> ... 3127	4920. <i>herpotrichioides</i> , <i>Not.</i> ... 3135
4911. <i>disseminata</i> , <i>Not.</i> ... 3128	4921. <i>pontiformis</i> , <i>Fckl.</i> ... 3136
4912. <i>sylvatica</i> , <i>Pass.</i> ... 3129	4922. <i>consobrina</i> , <i>K.</i> ... 3137
4913. <i>secalis</i> , <i>Hab.</i> ... 3130	4923. <i>littoralis</i> , <i>Sacc.</i> ... 3138
4914. <i>graminis</i> , <i>Fckl.</i> ... 3131	4924. <i>Sowerbyi</i> , <i>Fckl.</i> ... 3139
4915. <i>rubelloides</i> , <i>Plow.</i> ... 3132	4925. <i>typhicola</i> , <i>K.</i> ... 3140
4916. <i>sparsa</i> , <i>Fckl.</i> ... 3133	4926. <i>monilispora</i> , <i>Fckl.</i> ... 3141
4917. <i>intersparsa</i> , <i>Cke.</i> ... 3134	4927. <i>ammophilæ</i> , <i>Rehm.</i> ... 6671
4918. <i>clavicarpa</i> , <i>E. & E.</i> ... 6688	

D. In *Acotyledoneis*.

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|--|---|
| 4928. <i>lycopodicola</i> , Peck. 6690 | 4941. <i>bryophila</i> , Sacc. ... 3154 |
| 4929. <i>Crepini</i> , West. ... 3142 | 4942. <i>Heufleri</i> , Nsl. ... 3155 |
| 4930. <i>Mareyrensis</i> , Ph. 3143 | 4943. <i>polaris</i> , Sacc. ... 3156 |
| 4931. <i>campi-silii</i> , Sp. ... 3144 | 4944. <i>Rivana</i> , Not. ... 3157 |
| 4932. <i>helvetica</i> , S. & S. 3145 | 4945. <i>parmeliarum</i> , P. & P. ... 3158 |
| 4933. <i>lycopodina</i> , Mont. 3146 | |
| 4934. <i>equiseti</i> , K. ... 3147 | 4946. <i>apocalypta</i> , Rehm. 6691 |
| 4935. <i>caninæ</i> , P. ... 3148 | 4947. <i>ramalinæ</i> , Desm. ... 3159 |
| 4936. <i>arvensis</i> , Speg. ... 3149 | 4948. <i>sphyridiana</i> , Lahm. 6692 |
| 4937. <i>hiemalis</i> , S. & S. ... 3150 | 4949. <i>lemanæ</i> , Cohn. ... 3160 |
| 4938. <i>asplenii</i> , Rab. ... 3151 | = <i>fluvialis</i> , P. & P. 3161 |
| 4939. <i>caffra</i> , Thum. ... 3152 | 4950. <i>stereicola</i> , Ellis ... 6136 |
| 4940. <i>aquilina</i> , Pass. ... 3153 | 4951. <i>fungicola</i> , Wint. ... 7483 |

E. *Species colore dubie*.† In *Dicotyledoneis*.

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| 4952. <i>stictostoma</i> , B. & C. 3162 | 4961. <i>stictoides</i> , B. & C. 3171 |
| 4953. <i>lophanthi</i> , B. & C. 3163 | 4962. <i>cibostii</i> , Ces. & Not. Myc. Un. 165 |
| 4954. <i>digitalis</i> , Cr. ... 3164 | 4963. <i>Morthieri</i> , Roum. F. Gall. 1843 |
| 4955. <i>teucarii</i> , Cr. ... 3165 | 4964. <i>phlomidis</i> , Roum. F. Gall. 1938 |
| 4956. <i>nesodes</i> , B. & Br. 3166 | 4965. <i>plerothecæ</i> , Roum. F. Gall. 1837 |
| 4957. <i>janus</i> , B. & C. ... 3167 | |
| 4958. <i>indepressa</i> , D. R. & M. ... 3168 | |
| 4959. <i>taxicola</i> , Peck. ... 3169 | |
| 4960. <i>olivæspora</i> , B. & C. 3170 | |

†† In *Monocotyledoneis*.

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| 4966. <i>lucorum</i> , Cr. ... 3172 | 4971. <i>phragmiticola</i> , Cr. 3177 |
| 4967. <i>Weddellii</i> , M. ... 3173 | 4972. <i>ceratispora</i> , B. & C. 3178 |
| 4968. <i>incarcerata</i> , B. & C. 3174 | 4973. <i>Beaumontii</i> , B. & C. 3179 |
| 4969. <i>zizaniæcola</i> , B. & C. 3175 | 4974. <i>duplex</i> , Sow. ... 3180 |
| 4970. <i>latebrosa</i> , Ellis ... 3176 | |

II. EUHEPTAMERIA. *Sporidia medio colorato*.

- | | |
|---------------------------------------|---|
| 4975. <i>uncinata</i> , Nsl. ... 6693 | 4979. <i>mesædema</i> , B. & C. 3187 |
| 4976. <i>obesa</i> , D. R. & M. 3184 | 4980. <i>helichrysi</i> , Fab. ... 3188 |
| 4977. <i>elegans</i> , Rehm. ... 3185 | 4981. <i>bicuspidata</i> , C. & H. ... 6649 |
| 4978. <i>Thumeniana</i> , Nsl. 3186 | |

III. CLYPEOSPHÆRIA. *Perithecia clypeata*.*Sporidia subtriseptata*.

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| 4982. <i>contempta</i> , D. R. & M. ... 3196 | 4984. <i>aliquanta</i> , C. & E. 3198 |
| 4983. <i>hyperici</i> , Plow. ... 3197 | 4985. <i>enphorbiacea</i> , Pass. 3199 |
| | 4986. <i>Morreni</i> , West ... 6694 |

IV. REBENTISCHIA. *Sporidia 3-5 septata candata*.

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| 4987. <i>typhæ</i> , Fab. ... 2893 |
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SOME EXOTIC FUNGI.

BY M. C. COOKE.

Seynesia melanosticta, Cke. & Mass.

Epiphylla. Peritheciis sparsis, solitariis, dimidiatis, basin concretis (vix $\frac{1}{2}$ mm. diam.), atris, nitidis, ostiolo pertuso. Ascis cylindraceis, octosporis. Sporidiis uniserialibus, ellipticis, uniseptatis, vix constrictis, pallide fuscis, $10 \times 3.5 \mu$.

On living leaves of *Alsodeia*, sp. nov. Mount Ophir, Malacca (R. W. Hullett).

Cintractia pulverulenta, Cke. & Mass.

Ovaria implens, tumefaciens, massam atram, duram, demum pulveraceam, efficiens; glomerulis subrotundis, vel ovoideis, (40-50 μ), sporis circa 40, coacervatis, globosis, subtiliter verruculosus, 8-10 μ , fuscis.

On *Erianthus*. Nungklo, Khasia (C. Baron Clarke, 44069).

Cintractia patagonica, Cke. & Mass.

Intra ovaria matura orta. Sporis in globulas adglutinatiss, demum secedentibus, globosis, verruculosus, late fuscis, 7-9 plerumque 10 μ diam.

On *Bromus unioloides*. Bahia Blanca, N. Patagonia (G. Claraz).

Dendrodochium verticillatum, Cke. & Mass.

Sporodochiis pulvinatis, molliusculis, gelatinosis, carneis, crumpentibus ($\frac{1}{2}$ -1 m. diam.), sporophoris repetite verticillato-ramosis, conidiis acrogenis, ovatis, hyalinis, $5 \times 2 \mu$.

On rotting *Liquidambar*. S. Carolina (Ravenal, No. 2796).

Hydnum (Resupinatum) cretaceum, Cke.

Resupinatum, longe effusum, album. Subiculo crassiusculo, tomentoso, niveo. Aenleis robustis, subulatis, dependentibus, obtusis, ad basin connatis (1-2 mm. long), plerumque compressis, farinaceo-cretaceis. Sporis $4 \times 3 \mu$.

On bark. Brazil (Glaziou, 18118).

Spreading 3 or 4 inches, with a chalky appearance, as if dusted with lime.

Cintractia cryptica, Cke. & Mass.

Intra ovaria cryptica, minuta, inconspicua. Sporis aggregatis, ovato-globosis 30-40 μ ; sporis singulis, compresso-globosis, ad apicem minute verruculosus, brunneis, 12-14 μ diam.

On *Pollinia argentea*. Munepore (C. B. Clarke).

Macrophoma Ehretiae, Cke. & Mass.

Peritheciis globoso-depressis, sparsis, tectis, atris; ostiolo pertusis. Sporulis ellipticis, hyalinis, utrinque rotundatis (20-22 \times 10 μ), basidiis bacillaribus, simplicibus vel furcatis, suffultis.

On branches of *Ehretia formosana*. N. Coast of Formosa.

Gnomonia coriacea, Cke. & Mass.

Peritheciis minutis, in maculos orbicularos congestis, foliorum parenchymati innatis, ostiolo elongato, sursum leniter attenuato. Ascis clavato-stipitatis, octosporis. Sporidiis uniseptatis, obtusis, hyalinis, $10 \times 2-3 \mu$.

On coriaceous leaves. Brazil (*Glazou*, No. 18083).

Micropeltis maculata, Cke. & Mass.

Epiphylla, maculæformis. Peritheciis dimidiatis, orbiculari-convexulis, minutis, atris, nitidis, maculo fuligineo irregulari congregatis; ostiolo pertuso; ascis clavatis, octosporis; sporidiis fusiformibus, triseptatis, hyalinis, $14-15 \times 3-4 \mu$.

On dead coriaceous leaves. Brazil (*Glazou*, 18076, 18093, 18080).

Glypeolum zeylanicum, C. & M. Grer. XVII.

This species also on the same and on other leaves from Brazil (*Glazou*, 18070, 18084, 18078).

FUNGUS FORAYS, 1889.

HACKNEY NATURAL HISTORY SOCIETY.—For the past ten years Epping Forest has been the scene of one or two forays in the autumn in search of fungi, and on Saturday, September 14th, the first of these for the present season took place under the auspices of the Hackney Natural History Society. Fungus-hunters, like farmers, are privileged to grumble at the weather, and this year the traditional grumble was indulged in; for, however fine and enjoyable the day might be, the ground was so dry and hard that the fungi had no chance. Somehow or other the past two or three years have been so exceptional as regards fungi, that fungus-hunters have been almost driven to despair. It has been the custom to make a list at these excursions of all the species identified during the day, and the totals are compared year by year. At the corresponding excursion last year the list included some 150 species, of which twenty were new to the forest, but on the present occasion the list only reached 108, and only four new species (or five, including a new mould of great interest) and two well-marked varieties were determined. The species found for the first time in the forest area were *Agaricus (Pholiota) præcox*, *Agaricus semi-vestitus*, *Cortinarius torvus*, and *Trichia scabra*. The new mould was *Rhizotrichum aureum*. The incident of the day, however, was the finding of *Hydnum diversidens*, upon some trunks in Monk's wood. This species was first found in Britain in 1884, when Mr. H. T. Wharton collected it from a trunk at Fairmead, and since then it has only once been met with until the present occasion. It is a rare species in all parts of Europe. As for the residue of the day's gathering, it was, on the whole, very commonplace; the number of individuals of all species

were very few, and those of the most ordinary kind. Even those discovered for the first time in the forest are common enough in other parts of the country, and some species usually common everywhere could not be seen at all. Only six specimens of the well-known "chantarelle" could be found, and these are usually collected by the basketful for cooking. Not a single *Boletus edulis* could be seen anywhere, while such things as *Agaricus velutinus*, *Agaricus infundibuliformis*, *Marasmius peronatus*, *Craterellus cornucopioides*, *Panus stypticus*, etc., could not be seen at all. The most prominent genus was *Russula*, but of all the seventy British species of *Tricholoma* there were but two, and of the fifty-three species of *Clitocybe* there were but two, and thus throughout the whole of the white-spored Agarics. This peculiarity was also remarked last year. Although of the single large genus *Agaricus* no fewer than 825 species are recorded for Great Britain, only thirty-four were recognized during that day in the forest. All together the edible fungi collected, at all fit for the table, would not have constituted more than one meal for a healthy man.

ESSEX FIELD CLUB.—Following within a fortnight of the Hackney Society, the Essex Field Club held their annual Foray in Epping Forest on Friday and Saturday, September 27th and 28th, in search of fungi. The excursion on Friday was taken in the woods north of Epping, and on Saturday around Theydon Bois. The company was not so large as in many of the preceding years, but the weather continued fine and agreeable. This was the tenth annual foray of the Essex Field Club for this purpose, but the soil was so hard and dry, notwithstanding recent rains, that all kinds of fungi were very scarce. The total number of species determined as having been seen during the two days was 138, being less than last year, which also was unfavourable. Although the total was small, it included one species, *Pavillus Alexandri*, new to the British Islands, and five species additional to the Essex list, viz., *Agaricus (Clitocybe) gallinaceus*, Fr.; *Russula Linnaei*, Fr.; *R. incarnata*, Q.; *Lycoperdon saccatum*, Fr.; and *Diachæa leucopoda*, Bull. In the evening, after a substantial tea, the usual meeting was held in a large room at Rigg's Retreat, and when the business matters were disposed of, the exhibition of fungi duly inspected and commented upon, the results of the excursion were detailed by Dr. M. C. Cooke, and comparisons instituted between the Essex list of fungi and those published by other counties, notably that of Herefordshire. The whole number of Agaricini found in Britain now reaches 1,335 species, of which 483 have been recorded for Herefordshire, and now about 410 for Essex. This was considered to be a very favourable result, seeing that continuous excursions of four days each have been held by the Woolhope Club for the

past twenty years, that a variety of localities have been explored, that a greater humidity and variety of soil characterize the Herefordshire districts, and a larger number of experienced workers have every year been associated with the excursions. Following upon these remarks, allusion was made to the life and labours of the late Rev. M. J. Berkeley, especially in connection with mycology, and a sympathetic audience listened for some time, with manifest interest, to reminiscences of the twenty-five years of intercourse between the speaker and the deceased. In conclusion, young and active members of the club, efficient in the use of the microscope, were urged to direct their attention to the microscopic fungi of the forest hitherto almost unknown. It was urged that there were two or three compact groups which might be taken up independently by different individuals, and explored with advantage. Such were the Myxogasters, the Discomycetes, and the Uredinous fungi, for all of which handy and recent text-books were available at a cheap rate; so that there was no longer excuse for leaving so many of the minute fungi of Essex without investigation. A complete and revised list of the larger fungi of Essex has already been prepared, and it is hoped will soon be published, and in the hands of the members.

WOOLHOPE FUNGUS FORAY.—Twenty-one years ago the Woolhope Club organized its first "Foray amongst the Funguses," as it was called, the primary object being to collect specimens of edible fungi for cooking and serving at the annual dinner. Subsequently and speedily the scope of the forays was widened, so as to include all the larger fungi, especially the Hymenomycetes, and has been continued with more or less success down to the present day. The total number of the species of British Agaricini may be taken as 1334, and of these 483 have been collected in Herefordshire, as recorded in the new *Herefordshire Flora*. This is, as yet, the largest number recorded for any British county, that of Essex having reached only 410. The Woolhope excursions for this year commenced on October 1st, and the place of assembly was Ludlow, in Shropshire, with the weather favourable, but the ground and the woods on this side of the kingdom were too dry to give any promise of success. The party was a smaller one than usual, scarcely exceeding ten on any of the days, whilst the lack of "game" represented also a lack of enthusiasm. Amongst those who took part in the explorations of the week were the Rev. Canon Du Port, Rev. J. E. Vize, and Messrs. Bucknall, Phillips, Plowright, and M. C. Cooke. Tuesday's excursion was made in the woods of Downton Castle, over ground which had not been visited by the Club for many years; but it soon became painfully manifest that the old success was not to be realized, and after patient and diligent search for about four hours, only about eighty species could be

enumerated, and of these only one or two individuals had been seen. Two old and dry specimens of *Strobilomyces* only were found, and this has generally been a species of certain occurrence somewhere during the Woolhope week. *Marasmius Hudsoni* was rather plentiful on Holly leaves, but scarcely anything else of interest. The Wednesday's excursion was made in the woods of Downton Hall, now for the first time visited by the Club. The excursion was in itself a pleasant one, but as barren of results as the previous day had been, only sixty-eight species being determined, of which the most interesting was *Agaricus (Inocybe) hæmactus*, a species first found at Credin-hill several years ago, and now seen again for the second time. Although the total number of species found was below that of the Tuesday, there was a larger number of interesting species, such as *Agaricus pelianthinus*, *calamistratus*, *acerosus*, *Friesii*, *Marasmius erythropus*, and *Russula Linnei*. The Club day, Thursday, was occupied by a morning excursion to Dinmore, where about sixty species were determined between 10 a.m. and 2 p.m.; but this number had to be made up by recourse to microscopical species. The annual dinner afterwards, at the Green Dragon Hotel, was characterized by no especial feature, and *Hydnum repandum* was the fungus dish cooked "from the Club recipes," and served round to the assembled guests. In the evening, at a *conversazione* held at the house of T. Cam, Esq., one of the past presidents of the Club, a very large party of ladies and gentlemen were assembled, and papers read by E. C. Phillips, F.L.S., "On the Occurrence of the great Black Woodpecker in Great Britain;" by Rev. J. E. Vize, on "The Breathing System of Flowering Plants and their Allies;" and by W. Phillips, F.L.S., "On Popularizing the Knowledge of Edible and Poisonous Fungi," which latter was followed by a lively and interesting discussion, mainly on the proposal to recognize a few definite popular names for common edible fungi, and to disseminate information concerning them as widely as possible, especially amongst rural populations. The last day "of this eventful history" was devoted to Stoke Edith Park, and as park lands are perhaps the driest and most unproductive of any this year, it will not be surprising to learn that the record scarcely exceeded fifty, although more than half of these were pastoral species, which had not been met with on previous days. There is nothing more left to be recorded, save, after a careful comparison of all the lists, it may be that one or two species have been added to the county catalogue, but this is very doubtful. Reports have reached us of a plentiful harvest of fungi in Devonshire, and of a profusion in the North, but our own experiences in Essex, Shropshire, Herefordshire, Surrey, etc., during the past two or three weeks have satisfied us that, as a general rule, the present autumn has been unusually barren of fungi, no better, if not worse, than last year.

THE SUTTON COLDFIELD VESEY CLUB organized a half-day's excursion to Trickley Coppice, on Saturday afternoon, October 5th, for the collection of fungi. The whole time spent upon the ground was something like two hours, and during the entire period the rain was falling sharply and persistently, so that, at its termination, all the unfortunate excursionists, numbering about five-and-twenty, presented the unenviable appearance of drowned rats. Such an exhibition is not a novelty to fungus hunters, but it is one which has not been experienced at any organized excursion for the past two or three years. However, there was one redeeming feature, that the number of species collected was larger, proportionately, than at any excursion of the present year. The ground was sufficiently wet before the downfall began, and at its close was much more than sufficiently soft. The conductors on this occasion were Messrs. J. E. Bagnall, Grove, and M. C. Cooke, who prepared a list of the species determined, and reported a total of upwards of sixty, which was a fair average for almost any ordinary season. of thirty species per hour, but a high average for a season when about ten species per hour has hardly been exceeded. The collection included many very common species, the edible portions of which were selected and cooked under the superintendence of Mr. Grove, and formed an addition to the inevitable tea at the end of the afternoon. It may be of interest to mycophagists to learn that of the species eaten were *Pacillus involutus* and *Lactarius turpis*, two which certainly do not look very inviting when gathered, but, as here proved, perfectly harmless, and, if not particularly delicate, at least edible when more attractive viands are absent. The list of the afternoon's spoils included seven species of *Russula*, five species of *Lactarius*, eighteen white-spored Agarics, and some eight or nine Agarics with coloured spores. Whether any additions were made to the list recorded of the Warwickshire fungi cannot be determined at once, but no individual species of particular and special interest was secured. Had the weather been more propitious, there is no doubt the list would have been materially increased.

HAMPSHIRE FIELD CLUB.—The third annual fungus hunt in the New Forest was taken on Friday, October 25th, under the direction of the Rev. W. L. W. Eyre and M. C. Cooke. The party, numbering in all about five-and-twenty, started from the Lyndhurst Road Station, soon after 9.30, and proceeded through Buskett's Wood to the Kennels, and thence skirting the road to Lyndhurst. The day was fine, pleasant, and agreeable, and the number of species recorded about 140, of which 60 had not previously been entered on the Hampshire list. No species were found that were absolutely new, and few that were rare or interesting. Those most worthy of note were *Aq. (Entoloma)*

jubatus, *Ag. (Hypholoma) epixanthus*, and *capnoides*; *Ag. (Mycena) leucogalus*, *Ag. (Hebeloma) testaceus*, *Cantharellus devesus*, *Hydnum gelatinosum*, *Cortinarius talus*, and *Boletus duriusculus*. At an evening meeting, held at the Forest Hotel, the specimens were exhibited, and explained. Some remarks were made by the Chairman (Rev. W. L. W. Eyre) and M. C. Cooke, chiefly in reference to Edible and Poisonous species, and as to what steps should be taken to diffuse certain and useful knowledge amongst the rural population as to what to eat, and what to avoid; the conclusion being that a few of the most approved species should be selected, to which popular vernacular names should be given, and efforts should be made to facilitate the general determination of these species. A short excursion on Saturday morning brought the foray to a close.

BRITISH PYRENOAMYCETES.

By G. MASSEE.

(Continued from p. 12.)

Fam. 15. CAULICOLÆ, *Fr.* Immersedly innate, usually occurring on the dead stems of herbaceous plants.

GEN. 1. **PHOMATOSPORA**, *Sacc.* Perithecia covered or erumpent, sporidia continuous, hyaline.

* **GENUINA.** *Without paraphyses.*

P. Berkeleyi, *Sacc. Syll.* 1650; *Hdbk.* 2651 (= *Sphaeria phomatospora*, Berk.).

On potato stalks. Bexley, Weybridge, Highgate, Gloucester.

P. endopteris, *Ph. & Pl., Sacc. Syll.* 6383.

On *Pteris*. Leighwood, Bristol.

** **PHYSALOSPORA.** *Paraphysate.*

P. euphorbiæ, *P. & P., Sacc. Syll.* 1666.

On stems of *Euphorbia amygdaloides*. Dinmore.

P. psoramoides, *Borr., Sacc. Syll.* 6396.

On thallus of *Parmelia pulverulenta*.

GEN. 2. **DIDYMELLA.** Sporidia uniseptate, hyaline.

* **On Dicotyledons.**

D. planiuscula, *B. & Br., Sacc. Syll.* 2158; *Hdbk.* 2729.

On herbaceous stems. Batheaston.

D. superflua, *Fckl., Sacc. Syll.* 2166.

On nettle. Shere, Lynn.

D. tosta, *B. & Br., Sacc. Syll.* 2172; *Hdbk.* 2731.

- On *Epilobium*. Abinger, Shere, Dinmore, Rudloe Bath-easton.
D. commanipula, B. & Br., *Sacc. Syll.* 2173; *Hdbk.* 2730.
 On capsules of *Scrophularia*. Forfarshire.
D. bryonia, Fekl., *Sacc. Syll.* 2174.
 On *Bryonia dioica*. Shere, North Wootton.

** On *Monocotyledons*.

- D. refracta*, Cooke, *Sacc. Syll.* 2188.
 On *Scirpus*. North Wootton.

* * On *Acotyledons*.

- D. hyphenis*, Cooke, *Sacc. Syll.* 2193; *Hdbk.* 2688.
 On *Pteris*. Shere.
D. epipolytropa, Mudd., *Sacc. Syll.* 6488.
 On *Lecanora polytropa*.

GEN. 3. **METASPHAERIA**. Sporidia multiseptate, hyaline.

A. On *Dicotyledons*.

* *Sporidia* 2-4 septate.

- M. tritorulosa*, B. & Br., *Sacc. Syll.* 3404; *Hdbk.* 2770.
 On *Epilobium*, etc. Batheaston, Shrewsbury, Spye Park.
M. Thwaitesii, B. & Br., *Sacc. Syll.* 3420; *Hdbk.* 2722.
 On *Helianthus tuberosus*. Batheaston, Bristol.
M. complanata, Tode, *Sacc. Syll.* 3421; *Hdbk.* 2713.
 On herbaceous stems. Common.

B. On *Monocotyledons*.

* *Sporidia* 2-3 septate.

- M. cumana*, S. & Sp., *Sacc. Syll.* 3486.
 On leaves of *Carex*.
M. anarithma, B. & Br., *Sacc. Syll.* 3477; *Hdbk.* 2771.
 On *Aira caespitosa*. Batheaston.
M. recutita, Fr. *Sacc. Syll.* 3484; *Hdbk.* 2772.
 On grasses.

** *Sporidia* 5 to many septate.

- M. sabuletorum*, B. & Br., *Sacc. Syll.* 3499; *Hdbk.* 2719.
 On *Ammophila*. Forres N.B., Hunstanton.
M. acorella, Cooke, *Sacc. Syll.* 7040.
 On *Acorus calamus*. Totteridge.

* * On *Acotyledons*.

- M. cetraricola*, Nyl., *Sacc. Syll.* 3517.
 On *Cetraria Islandica*. Bræmar.

GEN. 4. **RAPHIDOSPORA.** Sporidia filiform, hyaline.

On Dicotyledons.

R. rubella, Pers., Sacc. Syll. 4017; Hdbk. 2700.

On herbaceous stems. Common.

R. urticæ, Rabh., Sacc. Syll. 4019; Hdbk. 2701.

On nettle, etc. Darenth, Shere.

R. ulnasporea, Cooke, Sacc. Syll. 4020; Hdbk. 2703; fig. 396.

On nettle. Shere.

R. acuminata, Sow., Sacc. Syll. 4025; Hdbk. 2702.

On thistles, etc. Common.

R. nigrificans, Cooke, Sacc. Syll. 4039.

On *Brassica*. Eastbourne.

On Monocotyledons.

R. cariceti, B. & Br., Sacc. Syll. 4065; Hdbk. 2707.

On sedges, etc. Batheaston.

R. eucrypta, B. & Br., Sacc. Syll. 4070; Hdbk. 2705.

On *Iris foetidissima*. Somerset.

R. helicosporea, B. & Br., Sacc. Syll. 4072; Hdbk. 2706.

On *Curex paniculata*. Shere, Batheaston.

* * OPHIOCHÆTA. *Perithecia setulose*.

R. herpotricha, Fr., Sacc. Syll. 4080; Hdbk. 2704.

On grasses.

FUNGI OF BELGIUM.

Dr. Lambotte has just issued the second part of his supplement to "La Flore Mycologique de la Belgique," consisting of 300 pages with plates, containing the Sphærospideæ, Melanconieæ, and Hyphomycetes; comprehending an addition of 850 species since 1880. The plates are in outline, and in a peculiar and unique manner, illustrate the several genera. It need hardly be said that the classification and arrangement is that of Saccardo's "Sylloge," for that will necessarily form the basis of the disposition of all these groups, for some time to come. A catalogue of this kind does not furnish much material for criticism, for it is little more than a catalogue, with the addition of spore measurements to each species, which must be accepted as a decided improvement upon the old method of a barren list, although we cannot affirm that the measurements have been verified, or whether they are simply those of the "Sylloge." In our opinion it would have been an improvement to have added to each species the reference to the page, or the

number, under which it is described in the "Sylloge," in order to facilitate reference. This would not have added a page to the bulk of the "Supplement," and would certainly have saved the student a vast amount of time in turning to Indices.

BRAITHWAITE'S MOSS-FLORA.

We have so often referred to this work during its progress, that little of commendation is left for us now to say. We are glad to welcome the 12th part, and so will all Bryologists who are interested in the British Moss-Flora. The only drawback is the tardy rate at which the parts make their appearance. However, we must be thankful for small mercies. The present part concludes the Grimmiaceæ, and adds the Schistostegaceæ. It is, moreover, announced to subscribers that the present completes one half of the work. It has occupied nine years to bring us up to the middle; will it take another nine years to bring us to the end? Let us hope that better luck is in store for us.

INDEX LICHENUM BRITANNICORUM.

BY THE REV. J. M. CROMBIE, F.L.S.

PART II.

(Continued from Vol. XV., p. 49.)

Tribe XVIII. **LECANO-LECIDEI**, Nyl.

Sub-Tribe I. **Pannariei**, Nyl.

Genus I. **PANNARIA**, Del., Nyl.

- Sp. 1 *P. rubiginosa* (Thnb.), Del.
 β . *cæruleobadia* (Schl.), Mudd.
 2 *P. brunnea* (Sw.), Nyl.
 f. *coronata* (Ach.), Nyl.
 3 *P. nebulosa* (Hffm.), Nyl.
 f. *biatoroidea*, Cromb.
 4 *P. Hookerii* (Sm.), Nyl.
 β . *leucolepis* (Whlnb.), Nyl.

Genus II. **PANNULARIA**, Nyl.

- Sp. 1 *P. lepidiota* (Smmrf.), Nyl.
 2 *P. microphylla* (Sw.), Nyl.
 f. *cheilea*, Nyl.

- 3 *P. triptophylla* (Ach.), Nyl.
 β . *incrassata*, Nyl.
- 4 *P. nigra* (Huds.), Nyl.
- * *P. psotina* (Ach.), Cromb.
- 5 *P. triseptata*, Nyl.
- 6 *P. melantera* (Strn.), Cromb.
- 7 *P. carnosa* (Dcks.), Cromb.
 β . *determinata* (Nyl.), Cromb.
- 8 *P. delicatula* (Fr. fil.), Nyl.

Genus III. COCCOCARPIA, Pers.

- Sp. 1 *C. plumbea* (Lghft.), Nyl.
 β . *myriocarpa* (Del.), Nyl.
 f. *lecanoroidea* Cromb.

Sub-Tribe II. **Lecanorei**, Nyl.

† Genus. LEPROLOMA, Nyl.

- Sp. 1 *L. lanuginosum* (Ach.), Nyl.

Genus I. LECANORA, Ach.

- * *Psoroma* (Ach.), Nyl.
- Sp. 1 *L. hypnorum* (Hffm.), Ach.
 f. *deaurata* (Ach.), Nyl.
- * *Squamaria* (DC.), Nyl.
- 2 *L. crassa* (Huds.), Ach.
 f. *melaloma*, Ach.
- 3 *L. lentigera* (Webr.), Ach.
- 4 *L. chrysolenca* (Sm.), Ach.
- 5 *L. cartilaginea* (Westr.), Ach.
- 6 *L. saxicola* (Poll.), Ach.
 β . *diffRACTA* (Ach.), Fr. fil.
 γ . *versicolor* (Pers.), Fr. fil.
- * *L. albomarginata*, Nyl.
- 7 *L. pruinifera*, Nyl.
- 8 *L. fulgens* (Sw.), Ach.
- * *Placopsis*, Nyl.
- 9 *L. gelida* (L.), Ach.
- * *Placodium* (DC.), Nyl.
- 10 *L. elegans* (Link.), Ach.
 β . *tenuis* (Whlbn.), Ach.
- 11 *L. murorum* (Hffm.), Nyl.
 β . *corticicola*, Nyl.
- * *L. tegularis* (Ehrh.), Nyl.

- f. Arnoldi (*Wedd.*), *Nyl.*
- β. obliterascens, *Nyl.*
- 12 *L. dissidens*, *Nyl.*
- 13 *L. callopisma*, *Ach.*
- * *L. sympagea* (*Ach.*), *Nyl.*
- 14 *L. cirrochroa* (*Ach.*).
- 15 *L. lobulata* (*Smmrf.*), *Nyl.*
- f. obliterata (*Pers.*), *Nyl.*
- 16 *L. scopularis*, *Nyl.*
- 17 *L. miniatula*, *Nyl.*
- 18 *L. granulosa* (*Mull. Arg.*), *Nyl.*
- 19 *L. teicholyta* (*DC.*), *Nyl.*
- f. arenaria (*Pers.*).
- 20 *L. Lallavei* (*Clem.*), *Nyl.*
- * *Leprophlaca*, *Nyl.*
- 21 *L. xantholyto*, *Nyl.*
- * *Candelaria*, *Nyl.*
- 22 *L. crenata*, *Nyl.*
- 23 *L. laciniosa* (*D.F.*), *Nyl.*
- f. granulosa, *Leight.*
- 24 *L. vitellina* (*Ehrh.*), *Ach.*
- f. corruscans (*Ach.*), *Nyl.*
- β. aurella, *Ach.*
- * *L. xanthostigma* (*Ach.*), *Nyl.*
- 25 *L. medians*, *Nyl.*
- 26 *L. epixantha* (*Ach.*), *Nyl.*
- * *Eulecanora*, *Nyl.*
- a Stirps, *L. cerinæ.*
- 27 *L. citrina*, *Ach.*
- f. depauperata, *Cromb.*
- 28 *L. flavocitrina*, *Nyl.*
- 29 *L. incrustans*, *Ach.*
- 30 *L. aurantiaca* (*Lghft.*), *Nyl.*
- * *L. erythrella* (*Ach.*), *Nyl.*
- β. inalpina (*Ach.*), *Nyl.*
- f. rubescens (*Ach.*), *Nyl.*
- 31 *L. crenulatella*, *Nyl.*
- 32 *L. ochracea* (*Schær.*), *Nyl.*
- 33 *L. ferruginea* (*Huds.*).
- β. festiva (*Ach.*), *Nyl.*
- f. crenularia (*With.*), *Nyl.*
- 34 *L. ferruginascens*, *Nyl.*
- 35 *L. fuscoatra* (*Bayrh.*), *Nyl.*
- 36 *L. concilians*, *Nyl.*
- 37 *L. cæsiorufa* (*Ach.*), *Nyl.*
- 38 *L. nigricans* (*Tuck.*), *Nyl.*
- 39 *L. atroflava* (*Turn.*), *Nyl.*

- 40 *L. Turneriana* (*Ach.*), *Nyl.*
- 41 *L. albolutescens*, *Nyl.*
- 42 *L. cerina* (*Ehrh.*), *Ach.*
 - f. 1 *cyanolepra* (*DC.*), *Nyl.*
 - 2 *albiseda*, *Nyl.*
 - β . *stillicidiorum* (*Hornem.*), *Nyl.*
- * *L. chlorina* (*Fw.*), *Nyl.*
 - f. *cyanopolia*, *Nyl.*
- ** *L. hæmatites* (*Chaub.*), *Nyl.*
- 43 *L. cerinella*, *Nyl.*
- 44 *L. biloculata*, *Nyl.*
- 45 *L. pyracea* (*Ach.*).
 - f. *submersa*, *Nyl.*
 - β . *pyrithroma* (*Ach.*), *Nyl.*
 - f. *picta* (*Tayl.*), *Nyl.*
- * *L. holocarpa* (*Ehrh.*), *Nyl.*
- 46 *L. vitellinula*, *Nyl.*
- 47 *L. luteoalba* (*Trun.*).
- 48 *L. phlogina* (*Ach.*).
 - β . *lutea* (*Ach.*), *Nyl.*
- 49 *L. irrubata* (*Ach.*).
 - * *L. calva* (*Dcks.*).
 - f. *incrustans* (*DC.*), *Cromb.*
- ** *L. Siebenhaariana* (*Krb.*), *Nyl.*
- 50 *L. nivalis* (*Krb.*), *Nyl.*
- 51 *L. tetrasticha*, *Nyl.*
- 52 *L. refellens*, *Nyl.*
- 53 *L. candicans* (*Dcks.*), *Schær.*
- 54 *L. chalybæa* (*Duf.*), *Schær.*
- 55 *L. variabilis* (*Pers.*), *Ach.*
 - β . *ecrustacea*, *Nyl.*
 - b *Stirps*, *L. disparatæ*, *Nyl.*
- 56 *L. jejuna*, *Nyl.*
- 57 *L. spodomela*, *Nyl.*
 - c *Stirps*, *L. sophodis*.
- 58 *L. sophodes*, *Ach.*
 - β . *malangica* (*Norm.*).
- * *L. lævigata* (*Ach.*), *Nyl.*
- 59 *L. exigua* (*Ach.*), *Nyl.*
 - f. *demissa* (*Krb.*).
 - β . *lecideoides*, *Nyl.*
- 60 *L. subexigua*, *Nyl.*
- 61 *L. roboris* (*Duf.*), *Nyl.*
- 62 *L. confragosa*, *Ach.*
 - * *L. crassescens*, *Nyl.*
- 63 *L. milvina* (*Whlbn.*), *Ach.*
- 64 *L. atrocinnerea* (*Dcks.*), *Nyl.*

- 65 *L. coniopta*, *Nyl.*
- 66 *L. Bischoffii* (*Hepp.*), *Nyl.*
 β. immersa (*Krb.*), *Cromb.*
- 67 *L. colobina*, *Ach.*
- 68 *L. Conradi*, (*Krb.*), *Nyl.*
- 69 *L. diplinthia*, *Nyl.*
- 70 *L. umbrinofusca*, *Nyl.*
- 71 *L. teichophila*, *Nyl.*
- 72 *L. æquata*, *Ach.*
- 73 *L. polyspora* (*Fr. fil.*), *Nyl.*
- 74 *L. isidioides* (*Borr.*), *Nyl.*
 d Stirps, L. alphoplacæ, *Ach.*
- 75 *L. melanaspis*, *Ach.*
- 76 *L. circinata* (*Pers.*), *Ach.*
 f. myrrhina (*Fr.*).
- * *L. sub-circinata*, *Nyl.*
- 77 *L. circinatula*, *Nyl.*

(To be continued.)

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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

AUSTRALIAN FUNGI.

By M. C. COOKE.

(Continued from p. 26.)

Sphæropsis (Macropodia) phomatoidea, C. & M.

Hypophyllous. Perithecia scattered over irregular brown spots, caused by some mining larvæ, convex, at first covered, black, pierced with a pore. Sporules elliptic, rounded at the ends, nucleate, amber-brown ($8 \times 4.5 \mu$), on rather short, curved basidia.

On *Eucalyptus* leaves. Victoria. (Martin, 473.)

Capnodiastrum orbiculatum, Cke. & Mass.

Hypophyllous. Spots orbicular (3 mm. diam.), consisting of a black interwoven mycelium. Perithecia minute, globose, submembranaceous, seated on the mycelium. Spores (not contained in asci) elliptical, brown, with a paler band across the centre, $12 \mu \times 4 \mu$.

On coriaceous leaves. Bellenden Ker, Queensland. (Bailey, 818.)

FUNGI OF MADAGASCAR.

Collected by MR. SCOTT ELLIOT.

Schizophyllum commune, Fr.

Lentinus exilis, Kl. (2761).

Lenzites repanda, Fr., var. (3006).

„ *Beckleri*, B.

„ *applanata*, Fr. (2755).

Fomes lucidus, Fr. (2804).

„ *annosus*, Fr. (3008).

„ *cingulatus*, Berk. (2789).

- Fomes rubiginosus*, Berk.
Polystictus flabelliformis, Fr. (2764).
 „ *sanguineus*, Fr.
 „ *scruposus*, Fr. (2796).
 „ *occidentalis*, Fr. (2735).
Poria vulgaris, Fr.
Trametes gausapat, B. & C. (2902).
Irpex flava, Jungh.
Hymenochaete tenuissima, Berk.
Cyphella (*Phæosporæ*) *fulvodisca*, C. & M.
Hirneola auricula judae, Fr. (2861).
Trybliidiella rufula, Spr.
Peziza (*Tarzetia*) *aluticolor*, Berk.
Nectria saccharina, Berk.
 „ *adelphica*, C. & M.
Valsa ceratophora, Tul.
 „ *monadelpha*, Fr.
Phyllachora graminis, Pers.
Æcidium oxalidis, Thum.
Puccinia malvacearum, M.
Uredo campanularum, C. & M.

***Cyphella* (*Phæosporæ*) *fulvodisca*, Cke. & Mass.**

Gregaria. Cupulis breviter stipitatis, cyathiformibus, albidis, pilis brevissimis hyalinis obductis ($\frac{1}{2}$ mm. diam.), margine tenni, incurvo, Hymenio laevi, fulvo. Sporis ellipticis, nucleatis, fulvis ($7.8 \times 4.5 \mu$.)

On decorticated branches. Fort Dauphin, Madagascar. (*Scott Elliot*.)

***Diploderma pachythrix*, Cke. & Mass.**

Subglobose; exoperidium thin, fragile, cinereous; endoperidium subcartilaginous, thin, persistent, pallid; capillitium consisting of thick parallel fibres composed of thick-walled, hyphae agglutinated in bundles and radiating from a central woody nucleus to the endoperidium; spores pale ochraceous, elliptical, minutely warted, $9.10 \times 4.5 \mu$.

Tarwin, Victoria. (*Mrs. Martin*, 459.)

Subterranean about 1 in. in diameter. The coarse capillitium, consisting of strands of agglutinated hyphae, resembles in appearance the fibrous portion of the pericarp of a coconut.

***Uredo campanularum*, C. & M.**

Hypophylla. Soris pallidis, sparsis, sub-bullatis, diu integris, demum fissuratis, pulverulentibus. Uredosporis oblongis, leniter asperulis, pallide flavescentibus, $16 \times 12 \mu$.

On leaves of *Lightfootia*. Fort Dauphin, Madagascar. (*Scott Elliot*, No. 2690.)

Nectria adelphica, *Cke. & Mass.*

Cæspitosa. Peritheciis in cæspitulos minutos (4-10), stromate aggregatis, globosis, compressis vel difformibus, lævibus, cinabarinis, ostiolo distincto pertusis, vix collabentibus; ascis cylindraceis, octosporis; sporidiis ellipsoideis, magnis, uniseptatis, vix medio constrictis, utrinque subconoideis, hyalinis ($30-35 \times 10 \mu$), nucleatis, demum leniter longitudinaliter striatulis.

On branches. Fort Dauphin, Madagascar. (*Scott Elliot.*)

Habit and appearance resembling *N. coccinea*.

NEW BRITISH FUNGI.

By M. C. COOKE.

(Continued from p. 28.)

Agaricus (Lepiota) emplastrum, *Cke. & Mass.*

Pileus convex, then expanded (2-3 inches), silky, pallid, covered at first with a smooth, membranaceous, dark-brown cuticle, which splits up into large, adherent, plaister-like patches or scales, margin smooth, naked. Stem equal, fibrillose ($3 \text{ in.} \times \frac{1}{2} \text{ in.}$), fistulose, girt by a superior erect ring, with a marginal brown band. Flesh turning pink when cut, gills crowded, free, remote, narrowed behind, leaving a broad collar round the stem. Taste and smell none. Spores apiculate at one end, nucleate, large, white, $20 \times 10-12 \mu$.—*Cooke Illus. Suppl. t. 1164.*

Gregarious, amongst grass in a churchyard. Ealing, Oct., 1887.

Somewhat resembling *A. Badhami*, but scales smooth and spores larger.

Agaricus (Tricholoma) fallax, *Peck 25 Report, t. 1, f. 5-8.*

Pileus firm, convex, expanded, rarely depressed in the centre, moist, smooth, yellow (sometimes rufous at the disc), about 1 in. diam. Stem short, smooth, yellow, stuffed, then hollow, sometimes attenuated at the base (1 in. long). Gills rounded behind, crowded, white, then yellowish. Spores $4-5 \mu$ long, ovate.—*Cooke Illus. Suppl. t. 1151 A.*

Under firs. Scarboro', March, 1883.

Allied to *Ag. cerinus*, P.

Agaricus (Collybia) thelephorus, *Cke. & Mass.*

Pileus rather fleshy, campanulate, with an acute mammillate umbo (1 to $1\frac{1}{2}$ inch diam.), ochraceous, becoming darker and fuliginous at the apex, margin at first incurved, then repand, faintly striate. Stem cylindrical, equal, hollow, purple at the base, paler at the apex (3-4 in. long), slender, smooth. Gills broadest behind, adnate, rather crowded, spores $8-10 \times 6 \mu$.—*Cooke Illus. Suppl. t. 1167.*

In peat bogs. Scarboro'.

Near ally to *Ag. collinus*.

Agaricus (Flammula) nitens, Cke. & Mass.

Cæspitose. Pileus hemispherical, convex, then expanded, obtuse ($1-1\frac{1}{2}$ in. diam.), shining, dry, somewhat silky, purple brown, stem ($2-3$ in. $\times \frac{1}{2}$ in.) equal, solid, flesh coloured, fibrillose. Gills crowded, adnate, margin entire, pallid, then umber. Spores almond-shaped, pale brown ($10 \times 5-7 \mu$).—*Cooke Illus. Suppl. t. 1154.*

On the ground. Carlisle, Sept., 1887.

Agaricus (Inocybe) fasciatus, Cke. & Mass.

Cæspitose. Pileus campanulate-convex ($2-3$ in. diam.), tawny, rufous at the disc, silky, clad with minute, darker, squarrose scales, flesh thin; stem slender, equal, or a little attenuated below ($2-3$ in. long), fibrillose, solid, reddish within and without at the base, pallid above. Gills crowded, attenuated in front, rounded behind, or slightly sinuate, thin, soft, pallid. Spores rough, $10 \times 6 \mu$. Odour and taste none.—*Cooke Illus. Suppl. t. 1173.*

On the ground. Kew Gardens.

Agaricus (Inocybe) violaceo-fuscus, Cke. & Mass.

Subcæspitose. Pileus convex, expanded, obtusely umbonate ($1-2$ in. diam.), flocculose, fibrillose, concentrically squamose, dry, umber, margin thin, torn, and fimbriate, stem solid ($2-2\frac{1}{2} \times \frac{1}{4}$ in.), violet above within and without, pallid below, smooth or silky, equal, flesh pallid when old. Gills broad, scarcely crowded, adnate or emarginate, violet, then umber, margin paler, serrulate. Veil at first whitish. Spores smooth, $7-8 \times 4 \mu$.—*Cooke Illus. Suppl. t. 1174.*

Amongst grass, in open places. Park End, Forest of Dean.

Agaricus (Naucoria) obtusus, Cke. & Mass.

Pileus campanulate, obtuse, smooth, becoming faintly striate about the margin, rufous, becoming paler (not much exceeding an inch broad and high); stem equal, fistulose, flesh colour, darker within, especially at the base (2 in. $\times \frac{1}{4}$ in.), smooth. Gills broadly adnate, or with a tooth, broad, ventricose, with a serrate edge. Spores rubiginous, $7-8 \times 4 \mu$.—*Cooke Illus. Suppl. t. 1155.*

On the ground. Scarboro'.

Allied to *Ag. Christineæ*.

Agaricus (Naucoria) nasutus, Kalch. Grev. VIII, 152, t. 142, f. 9.

Pileus thin, rather fleshy, campanulate, terminated by a long papillæform umbo, margin striate or sulcate, smooth, ochraceous. Stem fistulose, equal, flexuous, fibrillose, rather ferruginous; gills emarginate, with a decurrent tooth, somewhat crowded, broad, ventricose, ferruginous.—*Cooke Illus. Suppl. t. 1172 B.*

In swampy places. Scarboro'. Spores $13-14 \times 7-8 \mu$.

Agaricus (Galera) siligineus, Fries Hym. Eur. 267.

Pileus membranaceous, globose-campanulate, then expanded, unequal, even, not turning pale; stem rather flexuous, equal, pallid,

somewhat pruinose; gills adnate, broadly linear, rather crowded, ochre.—*Cooke Illus. Suppl. t. 1156.*

On road scrapings. Scarboro'.

The variety figured turns pale when dry, thus differing from the type. Spores $12 \times 7 \mu$.

Agaricus (Tubaria) muscorum, *Pers. Syn. 470.*

Pileus membranaceous, convex, depressed in the centre, striate, smooth, tawny yellow; stem fistulose, short, of the same colour, incrassated at the base, gills rather decurrent, horizontal, paler.—*Fries Hym. Eur. 274. Cooke Illus. Suppl. t. 1175 B.*

Amongst moss on heaths. Scarboro'.

Agaricus (Hypholoma) instratus, *Britz. Melan. f. 110.*

Cæspitose. Pileus hemispherical, convex, broadly umbonate (1 in. or more), dark brown, radiately rugose, stem hollow, equal white and smooth above, fibrillose or squamulose below, veil white, appendiculate. Flesh brownish. Gills subventricose, adnate, brown, then purple brown, paler at the edge. Spores $8 \times 4 \mu$.—*Cooke Illus. Suppl. t. 1157.*

On stumps, near Shrewsbury.

Possibly these specimens belong to the above species of Britzel-meyer, but we have been compelled to expand the description.

Bolbitius grandiusculus, *Cke. & Mass.*

Pileus campanulate, expanded (1-2 in diam.), smooth, pallid and faintly striate at the margin, rufous at the apex, stem smooth, white, fistulose, slender, gradually attenuated upwards (3-4 in. long), gills crowded, linear, narrow, attenuated behind and free, rusty ochre. Spores $15 \times 5 \mu$.—*Cooke Illus. Suppl. t. 1159.*

Amongst grass, on the cliffs. Scarboro'.

Polystictus (Stuposi) fibula, *Fr. Hym. Eur. 567.*

Whitish. Pileus coriaceous, soft, tough, velvety, without zones, sometimes radiately rugose, white within, margin entire, acute; pores small, rounded, acute, at length torn, turning yellowish.

On stumps, &c. Carlisle, Holm Lacey, Epping, near Bristol.

About the size of *P. versicolor*, but thicker, pores longer, surface less hairy, not distinctly zoned. Evidently not uncommon.

Otthia cratægi, *Eckl., Sacc. Syll., No. 2781.*

Perithecia aggregated in dense tufts, rather large, black, globose, minutely papillate, at length perforate; asci stipitate, cylindrical, eight-spored. Sporidia ovate, oblong, uniseptate, constricted, brown ($25-28 \times 12-14 \mu$).

On branches of *Cratægus*. Newcastle on-Tyne.

Phoma laminariæ, *Cke. & Mass.*

Perithecia gregarious, membranaceous, erumpent, depressedly globose, black, pierced at the apex with a minute pore, sporules profuse, elliptical, hyaline ($8-10 \times 3 \mu$).

On decaying fronds of *Laminaria*. West Kilbride, Ayrshire. (*D. A. Boyd.*)

Dichomera Laburni (*West p.p.*) *Cke. & Mass.*

Erumpent, caespitose. Perithecia globose, black, opaque, crowded in considerable numbers upon a definite stroma (5 mm. diam). Sporules elliptical, 3 septate, with one or more longitudinal septa, fuliginous ($22-25 \times 7 \mu$) on short stylospores.

On *Laburnum*. Blakey, Leicester. (*W. A. Vice.*)

This may be a form of *Camarosporium Laburni*, but at any rate it more closely resembles *Cucurbitaria Laburni* in being distinctly caespitose, on a definite stroma; sporules commonly triseptate, and smaller than in *Camarosporium Laburni*.

FUNGI OF JAVA.

By M. C. COOKE.

The following is portion of a collection made by Mr. Kurz, and communicated to the Rev. M. J. Berkeley:—

Agaricus (Mycena) bambusarum, *Berk. MSS.*

Fasciculatus vel sparsus, albus; pileo orbiculari, convexiusculo, laevi, obsolete umbonato (1 unc. diam.); stipite teretiusculo, fistuloso, laevi (1 unc. long); lamellis confertis, lanceolatis, didymis, saepe anastomosante-ramosis, acute-adnatis, albis.

Ad truncos Bambusarum. Bogor. (*Kurz*, 240).

Agaricus (Mycena) tintinnabulum, *Fries.*

Ad truncos. Bogor (*Kurz*, 544).

Agaricus (Omphalia) reversus, *Berk.*

Solitarius; pileo carnoso, suborbiculari, reverso, conico-umbonato, flavescente-albido (sub 1 unc. diam.); stipite rectiusculo, fistuloso, laevi (1 unc. long); lamellis distantibus, crassis, acie obtusis, lanceolatis, decurrenti-adnatis, albidis.

Ad terram argillaceam. Bogor. (*Kurz*, 324).

Agaricus (Pholiota) alutisporus, *Berk.*

Gregarius, gracilis, nonnunquam fasciculatus, sordide albus; pileo convexiusculo, conico vel obsolete umbonato, sub lente laevi, v. ruguloso, membranaceo ($\frac{1}{2}$ unc. diam.). Stipite fistuloso, annulato, tereti, elongato, laevi; lamellis confertis, lanceolatis, obtuse-adnatis, cum sporis alutaceis.

Ad terram argillaceam humidum. Bogor. (*Kurz*, 333).

Agaricus (Naucoria) multiferus, *Berk.*

Caespitosus. Pileo hemispherico, obsolete umbonato, sparse granuloso, cinerascete (in colorem testaceam vergente) in statu senili quidquam obsolete plicato, membranaceo, subcoriaceo; stipite longiusculo, tereti, fistuloso, subglabro, brunnescente vel sordidissimo albo, fibroso-carnosulo; lamellis confertis, lineari-lanceolatis, rotundato-adnatis. Sporis fulvis, $6-7 \times 3 \mu$.

Ad margines viarum. Bogor. (*Kurz*, 525).

Agaricus (Naucoria) micromegas, Berk.

Sparsus vel solitarius, ferrugineus vel fulvus. Pileo obtusiconico, plicato, lævi; membranaceo; stipite tereti, fistuloso, lævi; lamellis subdistantibus, latis, acute-adnatis.

Ad lignum putridum. Bogor. (Kurz, 296).

Agaricus (Stropharia) indusiatus, Berk.

Fasciculatus vel gregarius, albus, dein brunnescens, siccitate sordide purpurascens; pileo orbiculari, convexiusculo, adnato-squamuloso, sericeo, carnosulo, in disco membranaceo ($\frac{1}{2}$ - $\frac{3}{4}$ unc. lat.). Stipite tenax, tereti, fistuloso, lævi, fibroso-carnoso, superne adpressevelato, sub albido (senioribus sæpe annulatis); lamellis lanceolatis, confertissimis, fulvis.

Ad terram argillaceam. Bogor. (Kurz, 514).

Agaricus (Stropharia) pseudopsathyra, Berk.

Sparsus vel subgregarius; pileo e convexo suborbiculari-plano, sublævi, sordide albo, in colorem violascentem vergente, carnosulo; stipite sordide albo, fistuloso, tereti, lævi, velato; annulo tenui; lamellis linearibus, confertissimis.

Ad terram argillosam. Bogor. (Kurz, 325).

Agaricus (Psathyra) subvinosus, Berk.

Fasciculatus vel gregaris; pileo hemispherico, obtuso, senectate explanato, in statu juniore carnosulo dein submembranaceo, primo molli, subglabro, dein venuloso, albo, ad marginem sordide violaceo, striato; stipite tereti, fistuloso, albo, fibroso-carnosulo; lamellis confertissimis, linearibus, obtuse-adnatis, albidis dein sordide violaceo fuscis.

Ad lignum putridum. Bogor. (Kurz, 260).

Hiatula pusilla, Berk.

Gregaris vel sparsus, albus, pellucidus; pileo campanulato, margine deplanato, dein explanato, obsolete plicato, pilis hyalinis sparsis adperso, membranaceo (1-2 mm. diam.). Stipite tereti, fistuloso, lævi; lamellis simplicibus, distantibus, angustissimis, costæformibus, marginem versus sæpissime evanidis.

Ad ramos putridos. Bogor. (Kurz, 268).

Marasmius similis, Berk. & Curt.

(Kurz, 257.)

Polystictus extensus, Berk.

On dead wood. (Kurz, 517.)

Polystictus hirsutus, Fries.

On dead branches. (Kurz, 517.)

Laschia tremellosa, Fries.

On wood. (Kurz, 519.)

Stereum (Apus) Kurzianum, Cooke.

Submembranaceum, molle, tenue, pileo effuso-reflexoque, minutissime velutino, sæpe subruguloso, cervino (3 unc. et ultra \times 1 unc.). Hymenio glabro, pruinoso, carneo-fusco. Sporis $7 \times 5 \mu$.

On logs. Java. (*Kurz*, 518.)

When dry almost like brown paper. Near *S. bicolor*.

Thelephora anthocephala, *Fr.*

On the ground. (*Kurz*, 527.)

Clavaria fragilis, *Fr.*

On the ground. (*Kurz*, 527.)

Calocera cornea, *Fr.*

On wood. (*Kurz*.)

Cyathus Montagnei, *Tul.*

On chips. (*Kurz*, 521.)

Physarum cinereum, *Fries.*

On leaves, etc. (*Kurz*, 551.)

Stemonitis fusca, *Roth.*

On rotten wood. (*Kurz*, 545, 533.)

Arcyria punicea, *Pers.*

On rotten wood. (*Kurz*, 550.)

Hemiarcyria clavata, *Pers.*

On wood. (*Kurz*, 552.)

Hemiarcyria serpula, *Ditm.*

On chips. (*Kurz*, 540, 539.)

Xylaria ventricosa, *Berk.*

On wood. (*Kurz*, 256.)

Nectria sanguinea, *Fries.*

On branches. (*Kurz*, 553.)

Hypoxylon confluens, *Tode.*

On wood. (*Kurz*, 269.)

Conisphæria palmicola, *Fr.*

On palm petioles. (*Kurz*, 538.)

Peziza (Mollisia) vulgaris, *Fr.*

On branches. (*Kurz*, 258.)

Phoma acmella, *Berk.*

On leaves of *Podocarpus*. (*Kurz*, 549.)

Ceratium hydnoideum, *A. & S.*

On wood. (*Kurz*.)

Pachnocybe subulata, *Berk.*

On wood. (*Kurz*, 323.)

Alternaria pulvinata, *C. & M.*

Grisea, pulvinata (1-1½ mm. diam.). Hyphis erectis, densissime fasciculatis, pulvinulis hemisphaerico-depressis efformantibus, conidiis ovoideis, utrinque acuminatis, clathrato-septatis, fuscis, 65-70 × 30-35 μ, demum opacis, isthmis subhyalinis.

On palm trunks. Java. (*Kurz*, 529.)

BRITISH PYRENOMYCETES.

BY G. MASSEE.

*(Continued from p. 42.)*GEN. 5. **ANTHOSTOMELLA.** Sporidia simple, coloured.* EUANTHOSTOMELLA. *Sporidia obtuse.*

A. phæosticta, Berk., Sacc. Syll. 1034; Hdbk. 2699.

On *Carex pendula*. Batheaston.

A. tomicum, Lev., Sacc. Syll. 1045; Hdbk. 2654.

On stems of *Juncus*. Spye Park.GEN. 6. **DIDYMOSPHERELLA.** Sporidia uniseptate, coloured.* EUDIDYMA. *Epidermis not blackened.*

D. conoidea, Nsl., Sacc. Syll. 2644.

On herbaceous stems. Bristol.

D. empetri, Fries, Sacc. Syll. 2657.

On *Empetrum nigrum*.

D. palustris, B. & Br., Sacc. Syll. 2674; Hdbk. 2698.

On dead leaves of *Iris*, *Carex*, &c. Spye Park, Wilts, N. Wootton, Batheaston.D. microstictica, Leight., Sacc. Syll. 6589 (= *Verrucaria microstictica*, Leight.).On *Acaraspora fuscata* and *A. cervina*.** MICROTHELIA. *Epidermis blackened.*

D. tenebrosa, B. & Br., Sacc. Syll. 2685; Hdbk. 2679.

On *Arctium*. King's Cliffe. Batheaston.GEN. 7. **HEPTAMERIA.** Sporidia multiseptate, coloured.I. LEPTOSPHERIA. *All joints coloured.*A. On *Dicotyledons*.† *Sporidia 2-3 septate.** *Perithecia smooth.*

H. doliolum, Pers., Sacc. Syll. 2895; Hdbk. 2710.

On herbaceous stems. Common.

H. conoidea, Not., Sacc. Syll. 2896; Hdbk. 2710 (in part).

On herbs. Weybridge.

- H. Clivensis*, *B. & Br.*, *Sacc. Syll.* 2904; *Hdbk.* 2695.
On stems of *Arctium*, *Senecio*, &c. Darent Wood, Kent,
King's Lynn.
H. nigrella, *Rab.*, *Sacc. Syll.* 2922; *Hdbk.* 2728.
On *Angelica*. Rockhampton, King's Cliffe.
H. aparines, *Fekl.*, *Sacc. Syll.* 2926.
On *Galium aparine*. King's Lynn.
H. glæospora, *B. & C.*, *Sacc. Syll.* 2941; *Hdbk.* 2696.
On *Artemisia absinthium*. Fleetwood.

** *Perithecia hairy.*

- H. echinella*, *Cke.*, *Sacc. Syll.* 3182; *Hdbk.* 2723.
On *Atriplex*. Kentish Town, King's Lynn.

†† *Sporidia 5 septate.*

- H. planiuscula*, *B. & Br.*, *Sacc. Syll.* 2966; *Hdbk.* 2729.
On *Solidago*. Chiselhurst.
H. Ogilviensis, *B. & Br.*, *Sacc. Syll.* 2791; *Hdbk.* 2717.
On stems of nettle, ragwort, &c. Shere, Leigh Wood.
H. maculans, *Desm.*, *Sacc. Syll.* 2977; *Hdbk.* 2687.
On *Sisymbrium*, *Solanum*, &c. Shere, Darent, Terrington.

††† *Sporidia 6-16 septate.*

- H. agnita*, *Desm.*, *Sacc. Syll.* 2996; *Hdbk.* 2711.
On *Eupatorium*. Iinstead, Shrewsbury.
H. acuta, *Mont.*, *Sacc. Syll.* 2997; *Hdbk.* 2708 (= *conformis*,
Fr.).
On nettle stems. Common.
H. derasa, *B. & Br.*, *Sacc. Syll.* 2998; *Hdbk.* 2714.
On *Senecio*, Rosslyn, Shere, Twycross.
H. pellita, *Rab.*, *Sacc. Syll.* 2999; *Hdbk.* 2709.
On *Atriplex*. King's Lynn.

B. Growing on fruits.

- H. lunariæ*, *B. & Br.*, *Sacc. Syll.* 3508; *Hdbk.* 2694.
On dry capsules of *Lunaria rediviva*.

C. On Monocotyledons.

† *Sporidia 2-4 septate.*

- H. Michotii*, *West.*, *Sacc. Syll.* 3066 (= *biseptata*, *Awd.*, &
trimera, *Sacc.*).
On leaves of grasses and sedges. Lynn, Neatishead, Hants.
H. personata, *Nsl.*, *Sacc. Syll.* 3068.
On *Glyceria fluitans*. Lynn.
H. microscopica, *K.*, *Sacc. Syll.* 3069.
On *Phragmites communis*. Shere.

- H. marram*, Cke., *Sacc. Syll.* 3070.
On *Ammophila*. Happisburgh.
- H. arundinacea*, Sow., *Sacc. Syll.* 3081 ; *Hdbk.* 2623.
On *Phragmites communis*. Irstead, Lynn, Kew, King's Cliffe.
- H. typharum*, Desm., *Sacc. Syll.* 3086.
On *Typha*. Kew, N. Wootton.
- H. epicarcta*, Cooke, *Sacc. Syll.* 3090.
On *Carex*. Shere.
- H. juncina*, Awd., *Sacc. Syll.* 3094.
On *Juncus*. N. Wootton.
- H. triglochcinicola*, Curr., *Sacc. Syll.* 3107 ; *Hdbk.* 2721.
On stems and carpels of *Triglochin palustre*. Ringmer, Sussex.

†† *Sporidia* 5 septate.

- H. nigrans*, Desm., *Sacc. Syll.* 3108 ; *Hdbk.* 2716.
On grass leaves. Shere, Neatishead.
- H. culmicola*, Fr., *Sacc. Syll.* 3110.
On grass leaves. Highgate.
- H. nardi*, Fr., *Sacc. Syll.* 3115.
On *Nardus stricta*. Thringstone, N. Wootton.
- H. epicalamia*, Riess., *Sacc. Syll.* 3117.
On *Luzula*, *Triticum*, &c. Shere, Holloway.
- H. maritima*, C. & Pl., *Sacc. Syll.* 3118.
On *Juncus maritimus*. N. Wootton.
- H. Norfolkia*, Cke., *Sacc. Syll.* 3119.
On *Eleocharis* and *Juncus*. Hunstanton, N. Wootton, Tooting.
- H. elara*, Cke., *Sacc. Syll.* 3121.
On glumes of *Festuca*. Sandgate, Neatishead.
- H. vectis*, B. & Br., *Sacc. Syll.* 3123 ; *Hdbk.* 2715.
On *Iris*. Darenth, Newton, Fordon.
- H. rusci*, Wallr., *Sacc. Syll.* 3124 ; *Hdbk.* 2762.
On *Ruscus aculeatus*. Kew.

††† *Sporidia* 6-16 septate.

- H. culmifraga*, Fr., *Sacc. Syll.* 3126 ; *Hdbk.* 2624.
On grass stems. Irstead, Highgate, King's Cliffe.
- H. graminis*, Fekl., *Sacc. Syll.* 3131.
On *Phragmites communis*. Terrington.
- H. rubelloides*, Plow., *Sacc. Syll.* 3132.
On *Triticum repens*. King's Lynn.
- H. pontiformis*, Fekl., *Sacc. Syll.* 3136.
On grass. King's Lynn.
- H. duplex*, Sow., *Sacc. Syll.* 3180.
On *Sparganium*.

H. Sowerbyi, *Fckl.*, *Sacc. Syll.* 3139.

On *Scirpus*.

D. On *Acotyledons*.

H. caninæ, *Plow.*, *Sacc. Syll.* 3148.

On *Peltigera*. Dunsley.

H. parmeliarum, *P. & P.*, *Sacc. Syll.* 3158.

On *Parmelia saxatilis*. N. Wales.

H. lemaneæ, *Cohn.* (*fluviatilis*, *P. & P.*), *Sacc. Syll.* 3160.

On *Lemanea*. Longmynd.

III. CLYPEOSPHERIA. *Perithecia clypeate. Sporidia triseptate.*

H. hyperici, *Plow.*, *Sacc. Syll.* 3197.

On *Hypericum perforatum*. Castle Rising.

IV. REBENTISCHIA. *Sporidia septate, caudate.*

H. unicaudata, *B. & Br.*, *Sacc. Syll.* 2892 ; *Hdbk.* 2680.

On *Clematis vitalba*. Darenth, Batheaston.

MEMORABILIA.

SPHERIA CARYOPHAGA, *Schwein. Amer. Bor. No.* 1594, *Sacc. No.* 4332 ; *Sphæria nuclearia*, *De Not. Micr. Ital.*, ix., p. 462, f. iv. ; *Trematospheria nuclearia*, *Sacc. Syll. No.* 3308 ; *Sphæria (Pertusæ) Curtisii*, *Berk. in Curt. Catalogue*, p. 145 (from authentic specimen from Dr. Curtis) ; *Hypoxylon nucitena*, *B. & C., North Amer. Fungi No.* 844 ; *Melanomma? nucitena*, *Sacc. Syll. No.* 3239. From authentic specimens of Schweinitz, Berkeley, and Curtis, and the figure and description by Notaris, we are satisfied that the above are all one species. Sporidia triseptate, two middle cells dark-brown, extreme cells hyaline, 015-018 × 005 mm. The colour is often so deep as to mask the central septum, which has caused some discrepancies in the descriptions.

CHROMOSPORIUM ISABELLINUM, *Ellis & Sacc.*, *N. A. Fungi No.* 1391, is the same as *Chromosporium pactolinum*, *Cke. & Hark.*, "Grevillea," ix., 81.

CALOGLOSSA LEPRIEURII, *J. Ag.*—This alga, whose distribution is stated by Agardh to be the warmer Atlantic shores of America, and Australia, and New Zealand, has also been found in the following localities:—Bonin Islands (C. Wright), Kelani River, Ceylon (Fergusson), Mauritius (Col. Pike), and Akassa, West Africa. A variety *subtilissima* also occurs at Calcutta.

SYNOPSIS PYRENOMYCETUM.

(Continued from p. 33.)

GEN. 9. **PLEOSPORA.** Perithecia sparsa, erumpentia, sporidia muriformia.

* EU-**PLEOSPORA.** Peritheciis submembranaceis, sporidia colorata.

A. In *Dicotyledoneis*.† *Sporidia 3 septata.*

4988. oligomera, <i>S. & Sp.</i> 3713	4996. labiatarum, <i>C. & Hk.</i> ... 3717
4989. baccata, <i>Ellis</i> ... 7068	
4990. bardanæ, <i>Nsl.</i> ... 3714	4997. papaveracea, <i>Not.</i> 3718
4991. aurea, <i>Ellis</i> ... 7069	4998. permunda, <i>Cke.</i> ... 3719
4992. refracta, <i>K. & C.</i> ... 3715	4999. compressa, <i>Hark.</i> 7072
4993. cheiranthi, <i>Cocc.</i> ... 7070	5000. cassiæ, <i>Ell. & Ev.</i> 7073
4994. asperulæ, <i>Pass.</i> ... 3716	5001. characias, <i>Duby</i>
4995. alpina, <i>Rostr.</i> ... 7071	

†† *Sporidia 5 septata.*

5002. vulgaris, <i>Nsl.</i> ... 3720	5008. mucosa (<i>Fckl.?</i>)... 3726
5003. media, <i>Nsl.</i> ... 3721	5009. meliloti, <i>Rab.</i> ... 3727
5004. campanulæ, <i>Pass.</i> 3722	5010. goniolimonis, <i>Pass.</i> 3728
5005. oblongata, <i>Nsl.</i> ... 3723	5011. platyspora, <i>S.</i> ... 3729
5006. liniperda, <i>Thum.</i> ... 3724	5012. patella, <i>Fab.</i> ... 6159
5007. verecunda, <i>Curr.</i> ... 3725	5013. brunnea, <i>Cooke</i> ... 3427

††† *Sporidia 7 septata.*

5014. herbarum, <i>P.</i> ... 3730	5023. albicans, <i>Fckl.</i> ... 3736
5015. pisi, <i>Sow.</i> ... 3731	5024. chlamydospora, <i>Sacc.</i> ... 3737
5016. salsolæ, <i>Fckl.</i> ... 3732	
5017. arctica, <i>Fckl.</i> ... 7074	5025. dianthi, <i>Not.</i> ... 3738
5018. excavata, <i>Fr.</i> ... 3733	5026. vulgatissima, <i>Sp.</i> 3739
5019. tridactylitis, <i>Auers.</i> 3734	5027. denotata, <i>C. & E.</i> 3740
5020. sedi, <i>Roum.</i> ... 7075	5028. lanceolata, <i>K. & C.</i> 3741
5021. anastaticæ, <i>Bagn.</i> 3735	5029. Pricesiana, <i>Bagn.</i> 3742
5022. Briardiana, <i>Sacc.</i> 7076	5030. solani-nigri, <i>Roum.</i> 3155

†††† *Sporidia 8-12 septata.*

5031. dura, <i>Niessl.</i> ... 3743	5035. amplispora, <i>Ell. & Ev.</i> ... 7077
5032. rubicunda, <i>Nsl.</i> ... 3744	
5033. antinoriana, <i>Bagn.</i> 3745	5036. verbasci, <i>Rabh.</i> ... 7078
5034. anthyllidis, <i>Auers.</i> 3746	5037. gigaspora, <i>Karst.</i> 7079

Spor. septorum ignotus.

5038. lusitanica, <i>Pass.</i> ... 3747	5041. plicata, <i>Preuss.</i> ... 3750
5039. herniariæ, <i>Fckl.</i> ... 3748	5042. mendax, <i>Not.</i> ... 6158
5040. australis, <i>Cke.</i> ... 3749	5043. capparidis, <i>Speg.</i>

B. *Folii-fructicolæ.*

5044. drabæ, *Schrot.* ... 3751 5057. oxyacanthæ, *Pass.* 3774
 5045. pyrenaica, *Nsl.* ... 3752 5058. socia, *Sacc. & Pass.* 3775
 5046. gei-reptantis,
 Carest. ... 3753 5059. aucubæ, *West* ... 3776
 5047. leguminum, *Wallr.* 3754 5060. celtidis, *Cast.* ... 3777
 5048. Clarkeana, *Ell. &*
 Ev. ... 7080 5061. varians, *Ces.* ... 3778
 5049. paronychiæ, *Cooke* 7081 5062. erythrinæ, *Ces.* ... 3779
 5050. cerastii, *Oud.* ... 7082 5063. locnata, *Crie.* ... 3780
 5051. guaranitica, *Speg.* 7083 5064. globularioides, *Cr.* 3781
 5052. abbreviata, *Fckl.* 7084 5065. papillata, *K.* ... 3782
 = *petiolorum*, *Fckl.*
 5053. syringæ, *Fckl.* ... 3770 5066. gymnocladii, *Bagn.* 3783
 5054. euonymi, *Fckl.* ... 3771 5067. hesperidearum,
 Catt. ... 3784
 5055. frangulæ, *Fckl.* ... 3772 5068. brachyasca, *Pass.* 7085
 5056. grossulariæ, *Fries.* 3773 5069. Prostii, *P. & R.* ... 7086

C. In *Monocotyledoneis.*† *Sporidia 3 septata.*

5070. leptosphærioides, 5076. macrospora, *Schwl.* 3792
 S. & Ther. ... 3786 5077. sarcocystis, *B. & C.* 3793
 5071. Thuemeniana, *S.* 3787 5078. typhæ, *Pass.* ... 7500
 5072. chamærops, *D. R. &*
 M. ... 3788 5079. typhicola, *Cke.* ... 3794
 5073. culmorum, *Cke.* ... 3789 5080. quadrisepitata, *C. &*
 H. ... 7087
 5074. scirrroides, *S.* ... 3790 5081. calida, *P. & S.* ... 7089
 5075. andropogonis, *Nsl.* 3791

†† *Spor. 5 septata.*

5082. socialis, *Nsl.* ... 3795 5090. deflectens, *K.* ... 3802
 5083. cepæ, *Pr.* ... 3796 5091. hydrophila, *Karst.* 7501
 5084. microspora, *Nsl.* ... 3797 5092. pyrenophoroides, *S.* 3803
 5085. infectoria, *Fckl.* ... 3798 5093. vagans, *Nsl.* ... 3804
 5086. spargani, *Cke.* 5094. Harknessi, *B. & V.* 7090
 = *straminis*, *C. & H.*
 5087. scirpicola, *D. C.* ... 3799 5095. planispora, *Ell.* ... 7091
 5088. pentamera, *K.* ... 3800 5096. junciginea, *Cke.*
 5089. donacina, *Fr.* ... 3801

††† *Spor. 7 septata.*

5097. asparagi, *Rabh.* ... 3805 5106. Karsteni, *B. & V.* 3814
 = *arctica*, *Karst.*
 5098. allii, *Rabh.* ... 3806 5107. septemseptata,
 Auers. ... 3815
 5099. asphodelii, *Rabh.* 3807 5108. punctiformis, *Nsl.* 3816
 5100. rebissia, *Not.* ... 3808 5109. heleocharidis, *K.* ... 3817
 5101. agaves, *Not.* ... 3809 5110. subriparia, *Cke.* ... 3818
 5102. phragmospora,
 D. R. & M. ... 3810 5111. spinosella, *Rehm.* 3819
 5103. principis, *Pass.* ... 3811 5112. ovoidea, *Nsl.* ... 7092
 5104. discors, *M.* ... 3812 5113. arctagrostidis, *Oud.* 7093
 5105. abscondita, *S. & R.* 3813

++++ *Spor. 8 pluriseptata.*

- | | |
|--------------------------------------|---|
| 5114. gigantea, <i>M.</i> ... 3820 | 5118. straminis, <i>S.</i> ... 3824 |
| 5115. bambusæ, <i>Pass.</i> ... 3821 | 5119. elynæ, <i>Rabh.</i> ... 3825 |
| 5116. juuci, <i>Pass.</i> ... 3822 | 5120. pezizoides, <i>Ces.</i> ... 7088 |
| 5117. heterospora, <i>Not.</i> 3823 | 5121. islandica, <i>Johan.</i> ... 7094 |

Septorum ignotæ.

- | | |
|---------------------------------------|---------------------------------------|
| 5122. zelandica, <i>Cke.</i> ... 3826 | 5123. cladiicola, <i>Cr.</i> ... 3827 |
|---------------------------------------|---------------------------------------|

D. In *Acotyledoneis.*

- | | |
|--|--|
| 5124. solorinæ, <i>M.</i> ... 3828 | 5127. muscicola, <i>G. & M., Grev.</i> |
| 5125. pteridis, <i>Rabh.</i> ... 3829 | <i>xvii., 76</i> |
| 5126. engeliana, <i>Saut.</i> ... 7095 | |

E. In *Charta*, etc.

- | | |
|--|--------------------------------------|
| 5128. chartarum, <i>Fckl.</i> ... 3830 | 5130. malacospora, <i>Speg.</i> 3832 |
| 5129. Zimmermani, <i>Roum.</i> 3831 | |

** CATHARINIA. Sporidiis hyalinis.

- | | |
|--|--|
| 5131. hyalospora, <i>Speg.</i> 3833 | 5134. vitrispora, <i>C. & Hk.</i> 3836 |
| 5132. pachyasca, <i>Auers.</i> 3834 | 5135. peltigeræ, <i>Fckl.</i> ... 3837 |
| 5133. pallida, <i>S. & S.</i> ... 3835 | |

* * SCLEROPLEA. Peritheciis sclerotioideis, sporidiis coloratis.

- | | |
|----------------------------------|--|
| 5136. nuda, <i>Cke.</i> ... 3839 | 5137. sclerotioides, <i>Speg.</i> 3840 |
|----------------------------------|--|

*** JULELLA. Asci bispori.

- 5137 bis. Kellermanni, *Ellis.*

GEN. 10. **PYRENOPHORA**, *Fr.* Perithecia setulosa, sporidia muriformia.

A. EUPYRENOPHORA. Peritheciis sclerotioideis.

- | | |
|--|---------------------------------------|
| 5138. relicina, <i>Fckl.</i> ... 3841 | 5140. phæocomes, <i>Reb.</i> ... 3843 |
| 5139. trichostoma, <i>Fr.</i> ... 3842 | |

Dubia.

5141. inclusa, *Lasch.* ... 3844

B. CHETOPLEA. Peritheciis coriaceo-membranaceis.

- | | |
|---------------------------------------|---|
| 5142. calvescens, <i>Fr.</i> ... 3845 | 5148. phæocomoides, |
| 5143. pellita, <i>Fr.</i> ... 3846 | <i>Sacc.</i> ... 3848 |
| 5144. depressa, <i>Peck.</i> ... 7098 | = <i>phæocomes</i> , <i>B. & B.</i> |
| 5145. abscondita, <i>Karst.</i> 7099 | 5149. gracialis, <i>Nsl.</i> ... 7100 |
| 5146. armeriæ, <i>Cord. & Ic.</i> | 5150. setigera, <i>Nsl.</i> ... 3849 |
| 5147. venturia, <i>Sp.</i> ... 3847 | 5151. phæospora, <i>Dby.</i> ... 3850 |

5152. Venziana, <i>Sacc.</i> ...	3851	5165. chrysospora, <i>Nsl.</i>	3861
5153. penicillus, <i>Schw.</i> ...	3852	5166. rosæ, <i>D. Not.</i> ...	3862
5154. paucitricha, <i>Fckl.</i>	7101	5167. Notarisii, <i>Sacc.</i> ...	3863
5155. nivalis, <i>Nsl.</i> ...	3853	5168. fenestrata, <i>Peck.</i> ...	7103
5156. helvetica, <i>Nsl.</i> ...	3854	5169. comata, <i>Nsl.</i> ...	3864
5157. trichostomella, <i>S.</i>	3855	5170. Wichuriana, <i>Schr.</i>	3865
5158. coronata, <i>Nsl.</i> ...	3856	5171. polyphragmia, <i>S.</i>	3866
5159. minuta, <i>Roum.</i> ...	3040	5172. aparaphysata, <i>Ther.</i>	7104
5160. hispida, <i>Nsl.</i> ...	3857	5173. lanuginosa, <i>S.</i> ...	3867
5161. oligotricha, <i>Nsl.</i> ...	7102	5174. hispidula, <i>Nsl.</i> ...	3868
5162. tragacanthæ, <i>Rab.</i>	3858	5175. parvula, <i>Speg.</i> ...	3869
5163. androsaces, <i>Fckl.</i>	3859	5176. sphagnæceticola,	
5164. ciliata, <i>Ellis</i> ...	3860	<i>Cr.</i> ...	3870

C. CAPRONIA, *Sacc.* Asci 16 spori.5177. sexdecemspora, *Cke.* 3872

Fam. 16. FOLIICOLÆ. *Fr. S. M.* ii. 513. Perithecia innata, tecta, plerumque foliicola.

GEN. 1. **LÆSTADIA.** Sporidia continua, hyalina.* GENUINA. Asci *aparaphysati.*

5178. punctoidea, <i>Cke.</i>	1592	5201. auripunctum,	
5179. stigmatodes, <i>B. & C.</i>	5999	<i>Hark.</i> ...	6370
5180. alnea, <i>Fr.</i> ...	1593	5202. system-solare, <i>Fckl.</i>	1606
5181. rosæ, <i>Awd.</i> ...	1594	5203. polystigma, <i>Ell. & Ev.</i>	6371
5182. Malbrancheana, <i>Sacc.</i>	6364	5204. faginea, <i>Cke. & Pl.</i>	6001
5183. cerris, <i>Pass.</i> ...	1595	5205. excentrica, <i>Crie.</i> ...	1607
5184. Cookeana, <i>Awd.</i> ...	1596	5206. buxi, <i>Fckl.</i> ...	6003
5185. radiata, <i>Wallr.</i> ...	1597	5207. buxifolia, <i>Cke.</i> ...	6002
5186. potentillæ, <i>Rostr.</i>	6365	5208. perpusilla, <i>Desm.</i>	1608
5187. Niesslii, <i>Kunze.</i> ...	1598	5209. microspora, <i>Awd.</i>	1609
5188. guarapiensis, <i>Speg.</i>	6366	5210. canificans, <i>Fckl.</i> ...	1610
5189. socia, <i>Penz.</i> ...	1599	5211. rhytismoides, <i>Berk.</i>	1611
5190. veneta, <i>S. & Sp.</i> ...	1600	5212. microscopica, <i>Nsl.</i>	6373
5191. pseudoplatani, <i>Pass.</i>	7442	5213. attenuata, <i>Crie.</i> ...	1612
5192. albocrustata, <i>Schw.</i>	6000	5214. zaviana, <i>S. & B.</i> ...	6374
5193. cylindrasca, <i>S. & Sp.</i>	1601	5215. angulata, <i>Fckl.</i> ...	1613
5194. celata, <i>Hark.</i> ...	6367	5216. echinophila, <i>Schw.</i>	1614
5195. contacta, <i>Desm.</i> ...	1602	5217. depressa, <i>Peck.</i> ...	6375
5196. orontii, <i>Ell. & Ev.</i>	6368	5218. cephalariæ, <i>Awd.</i> ...	1615
5197. areola, <i>Fckl.</i> ...	1603	5219. lusitanica, <i>Awd.</i> ...	1616
5198. fusispora, <i>S. & B.</i>	6369	5220. caryophyllea, <i>C. & Hk.</i>	6375
5199. acerifera, <i>Cke.</i> ...	1604	5221. Marii, <i>De Not.</i> ...	1617
5200. sylvicola, <i>S. & Roum.</i>	1605	5222. minutissima, <i>Awd.</i>	1618
		5223. carpinea, <i>Fr.</i> ...	1619

5224. *camilleæ*, *Cooke* ... 6376
 5225. *comedens*, *Schwz.* 2104
 5226. *millepunctata*,
 Desm. ... 1620
 5227. *cinerascens*, *Schwz.* 6005
 5228. *pinastri*, *DC.* ... 1621
 5229. *cooperta*, *Desm.* ... 1622
 5230. *magnoliae*, *Ellis* ... 6004
 5231. *jasminicola*, *Desm.* 1623
 5232. *bupleuri*, *D. R. & M.* 1624
 5233. *tuscula*, *Pass.* ... 6006
 5234. *fraxinicola*, *C. & Pk.* ... 1626
 5235. *melaleucæ*, *Berk.* ... 6007
 5236. *minuscula*, *Lev.* ... 1627
 5237. *guaranitica*, *Speg.* 6377
 5238. *mappa*, *Berk.* ... 1628
 5239. *nebulosa*, *De Not.* ... 1629

Species dubie.

5256. *brunnea*, *B. & C.* ... 1636
 5257. *glaucescens*, *Cke.* 1637
 5258. *epilobiana*, *Sacc.* ... 1638
 5259. *mali*, *Fckl.* ... 1639
 5260. *comedens*, *Pass.* ... 1640
 5261. *perusta*, *B. & Br.* ... 1641
 5262. *caricicola*, *Fckl.* ... 1642
 5263. *cicutæ*, *Kirch.* ... 1643
 5264. *œnanthicola*, *Fckl.* 1644
 5265. *epilobii*, *Wallr.* ... 1645
 5266. *cocophila*, *Cke.* ... 1646
 5267. *violæ*, *Lib.* ... 1648
 5268. *Rabenhorstii*, *Ces.* 1649
 5269. *cucurbitacearum*,
 Schwz. ... 6014
 5270. *filicina*, *Winter* ... 7443

** PHYSALOSPORA.

Asci paraphysati.

5271. *Wrightii*, *B. & C.* ... 1661
 5272. *alpina*, *Speg.*, 1664 6385
 5273. *megastoma*, *Peck.* 1669
 5274. *fallaciosa*, *Sacc.* ... 1670
 5275. *citricola*, *Penz.* ... 1671
 5276. *disseminata*, *Sacc.* 1673
 5277. *claræ-bonæ*, *Speg.* 1674
 5278. *hyalospora*, *Ces.* ... 1676
 5279. *lathyri*, *D. R. & M.* 1681
 5280. *phymatoides*, *Mont.* 1683
 5281. *protuberans*, *Fckl.* 1684
 5282. *fusispora*, *S. & R.* 6386
 5283. *philoprina*, *B. & C.* 1685
 5284. *consociata*, *Ell. & H.* 1688
 5285. *palustris*, *Mont.* ... 1697
 5286. *melaleucæ*, *Lev.* ... 1698
 5287. *cassie*, *Lev.* ... 1707
 5288. *sporadina*, *Lev.* ... 1708
 5289. *arthuriana*, *Sacc.* 6017
 5290. *ecastophylli*, *Lev.* 1715
 5291. *nitens*, *Lev.* ... 1716
 5292. *coccodes*, *Lev.* ... 1717
 5293. *labecula*, *Lev.* ... 1723
 5294. *miconiæ*, *Duby.* ... 1724
 5295. *inanis*, *Schwz.* ... 1725
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5310. aquatica, <i>Oke.</i>	... 6028	5349. pyri, <i>Awd.</i>	... 1846
5311. oblivia, <i>Oke.</i>	... 1822	5350. septorioides, <i>Desm.</i>	1847
5312. familiaris, <i>Awd.</i>	... 1823	5351. latebrosa, <i>Oke.</i>	... 1848
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Grevillea,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY
AND ITS LITERATURE.

NEW BRITISH FUNGI.

(Continued from p. 54.)

Agaricus (Flammula) purpuratus, Cooke & Mass.

Pileus rather fleshy, convex, then expanded, obtusely umbonate (1-2 in. diam.), purple or purple-brown, clad with minute floccose scales of the same colour. Stem curved, ascending, equal (1-2 in. long, 2-3 lines thick), smooth and pallid above, purple below and granulose, solid, flesh pale-yellowish above, purplish below, ring fibrillose; gills adnate, somewhat rounded behind, not crowded, lemon-yellow, at length bright ferruginous ($8 \times 5 \mu$). Taste very bitter.—Cooke *Illus. Supp. t.* 964.

On tree fern stems. Kew Gardens.

Cyphella cernua, Schum. *Flor. Sælland. p.* 421.

Minute, scattered, whitish, pallid, cyathiform, nodding, margin quite entire, or more often laciniate, teeth unequal, and somewhat turned in. Stem rather short, thin, dilated at the apex, diaphanous, when old umber at the base.—*Fl. Dan. t.* 1970, *f.* 3.

On elder bark. Ayrshire. (*D. A. Boyd.*)

Fries evidently considers this a variety of *Cyphella capula*, Fr. Spores $10 \times 8 \mu$.

Peziza leucomelas, P. Grev. xvii., 44.

This has occurred also at Norwood.

Phoma nepenthis, Cke. & Mass.

Perithecia scattered, immersed, black, membranaceous, perforate. Sporules elliptical, binucleate, hyaline, $7 \times 3\frac{1}{2} \mu$, on short sporophores.

On dead pitchers of *Nepenthes*. Readlands, Glasgow. (*D. A. Boyd.*)

Cytispora taxifoliæ, Cke. & Mass.

Stromatibus sparis, globoso-conicis, lævibus, nigris, erumpentibus, intus 3-4 loculatis, sphaeriæformibus, ostiolo conico, basidiis minutis; sporulis allantoides, minutis, hyalinis, $3 \times 1 \mu$.

In foliis *Taxi*. Near Carlisle.

Hendersonia hapalocystis, Cooke.

Perithecia scattered, immersed, scarcely visible except by cutting away the wood. Spores large, $45-50 \times 18 \mu$, four-celled, the two median cells large, subglobose, flattened at the junction, dark brown, nearly black, ultimate cells small, hyaline, almost like an apiculus at each end.

On decorticated twigs of ash, etc. Near Bristol.

Heterosporium algarum, Cke. & Mass.

Fully matured specimens prove that the conidia of *Cladosporium algarum*, C. & M., "Grevillea," xvi., 81, are echinulate, and hence *Heterosporium*.

On *Laminaria*. West Kilbride, N.B.

Glæosporium cinctum, B. & C. Sacc. Syll. 3765.

On leaves of orchids in conservatory. Glasgow. (D. A. Boyd.)

Apparently *Glæosporium affine*, Sacc. Syll. 3707, is the same species.

Glæosporium elasticum, Cke. & Mass.

Pustules minute, scattered, turning black, chiefly on the upper surface; conidia oozing out when moist, elliptical, or elongated elliptical, rounded at the ends, hyaline, granular, sometimes nucleate, $12-20 \times 5 \mu$.

On dead leaves of *Ficus elastica*. Botanic Garden, Glasgow. (D. A. Boyd.)

Volutella citrina, Cke. & Mass.

Erumpent, scattered, discoid, lemon-yellow ($\frac{1}{3}$ mm. diam.), sessile, resembling a minute *Peziza*, circumscribed by dense slender hyaline setæ, which are flexuous, smooth, and septate. Conidia oblong, $3-4 \times 1\frac{1}{2} \mu$.

On stalks of *Trollius*. West Kilbride, Ayrshire. (D. A. Boyd.)

Diaporthe (Euporthe) ilicina, Cooke Fungi Britt. 490.

Stromate ramulos cortice relaxato, in ligni superficie nigricante limitato, peridermio decolorato; lineo nigro circumscripto; peritheciis globulosis, singulis vel gregariis, ostiolo leniter emergente, ascis subfusoides; sporidiis lanceolatis, quadrinucleatis, dein uniseptatis, $16-18 \times 3 \mu$.

On *Ilex aquifolius*.

Physalospora Thistletonia, Cooke.

Epiphyllous. Spots large, irregular, pallid, with a roseate border. Perithecia scattered over the spots, depressedly globose, black, covered by the cuticle; asci clavate. Sporidia biseriate, sublancoolate, continuous, hyaline, with 3-5 nuclei, $22 \times 7 \mu$.

On fading leaves of *Rhododendron*.

Lophiostoma (Lophiotrema) hysterioides, Currey in Herb.

Peritheciis gregariis, semiemersis, atris, subglobosis, lateraliter compressis, ostiolo lineari. Ascis clavatis, octosporis. Sporidiis fusiformibus, primum 1-septatis, nucleatis, demum, 3-5 septatis, hyalinis, vix constrictis (0.3×0.05 mm.).

On rotten wood. Chislehurst, England.

SYNOPSIS PYRENOMYCETUM.

By M. C. COOKE.

(Continued from p. 67).

5458. Weinmanniæ, <i>Cke.</i> 7453	5463. pandurata, <i>Ell.</i> §
5459. atra, <i>Lev.</i> ... 1921	<i>Ev.</i> ... 6432
5460. cassinopsidis, <i>K. & C.</i> ... 1922	5464. Banksiæ, <i>C. & M.</i>
5461. coffeicola, <i>Cke.</i> ... 1923	5465. fraxini, <i>Nsl.</i>
5462. gordoniæ, <i>Cke.</i> ... 6052	5466. alyxiæ, <i>C. & M.</i>
	5467. bracteophila, <i>Pass.</i>

** *Clado-carpogence.*

5468. melanophora, <i>Speg.</i> 1924	5474. leguminis-cytisi, <i>Desm.</i> ... 1929
5469. fumaginea, <i>Catt.</i> 1925	
5470. hæmatites, <i>Rob.</i> ... 2159	5475. conigena, <i>Peck.</i> 6415 6433
5471. cytisi-sagittalis, <i>Awd.</i> ... 1926	5476. sordidula, <i>Speg.</i> ... 6434
5472. inflata, <i>Penz.</i> ... 1927	5477. polyspora, <i>Joh.</i> ... 6459
5473. inconspicua, <i>Schrot.</i> 1928	

† *Herbicolæ.** *Foliicolæ.*

5478. fusicpora, <i>Fckl.</i> ... 6435	5499. adusta, <i>Fckl.</i> ... 6440
5479. pulsatillæ, <i>Lasch.</i> 1930	5500. epilobii, <i>Crie.</i> ... 1943
5480. hellebori, <i>Roum.</i> <i>Fl. Gall</i> 1710	5501. cænothæræ, <i>Ell. & Ev.</i> ... 6450
5481. nivalis, <i>Oud.</i> ... 6436	5502. hypericina, <i>Ellis</i> 6057
5482. lachesis, <i>Sacc.</i> ... 1931	5503. intermixta, <i>Nsl.</i> ... 6054
5483. thalictri, <i>Ell. & Ev.</i> 6437	5504. tingens, <i>Nsl.</i> ... 6059
5484. hermione, <i>Sacc.</i> ... 1932	5505. desmodii, <i>Wint.</i> ... 6441
5485. epimedii, <i>Sacc.</i> ... 1933	5506. Linhartiana, <i>Nsl.</i> 6442
5486. papaveris, <i>Fckl.</i> ... 6458	5507. vulnerariæ, <i>Fckl.</i> 1944
5487. adonis, <i>Sacc.</i> ... 1934	5508. consociata, <i>Rehm.</i> 6443
5488. nubigena, <i>Speg.</i> ... 6056	5509. phaseolicola, <i>Desm.</i> 1945
5489. umbrosa, <i>Sacc.</i> ... 1935	5510. Morierei, <i>Crie.</i> ... 1946
5490. macowaniana, <i>Wint.</i> ... 6438	5511. nemorosa, <i>S. & Sp.</i> 1947
5491. pedicularis, <i>Karst.</i> 1936	5512. nerviseda, <i>Speg.</i> ... 1948
5492. pyrenaica, <i>Speg.</i> ... 6057	5513. ariadna, <i>Sacc.</i> ... 1949
5493. impatientis, <i>P. & Cl.</i> 1937	5514. potentillæ, <i>Oud.</i> ... 6444
5494. carniolica, <i>Nsl.</i> ... 1938	5515. geicola, <i>K. & C.</i> ... 1950
5495. brassicicola, <i>Duby.</i> 1939	5516. fragariæ, <i>Tul.</i> ... 1951
= armoraciæ, <i>Fckl.</i>	5517. earliana, <i>Wint.</i> ... 6445
5496. sylvatica, <i>S. & Sp.</i> 1940	5518. dejanira, <i>Sacc.</i> ... 1952
5497. sarraceniæ, <i>Schwz.</i> 1941	5519. maculans, <i>S. & R.</i> 1953
5498. microspila, <i>B. & Br.</i> 1942	5520. ootheca, <i>Sacc.</i> ... 1954
	5521. dryadis, <i>Awd.</i> ... 1955

5522. octopetalæ, *Oud.*... 6446
 5523. Biberwierensis, *Awd.* 1956
 5524. innumerella, *Karst.* 1957
 5525. melanoplaca, *Desm.* 1958
 5526. pseudo-maculifor-
 mis, *Desm.* ... 1950
 5527. jurinæ, *Fckl.* ... 1961
 5528. eriophila, *Nsl.* ... 1962
 5529. confinis, *Karst.* ... 1967
 5530. maculicola, *Wint.* 6449
 5531. pieris, *Sacc.* ... 1963
 5532. tussilaginis, *Rehm.* 1964
 5533. arnicæ, *Spæg.* ... 1965
 5534. hieracii, *Cke.*
 5535. carlinæ, *Wint.* ... 1966
 5536. affinis, *Wint.* ... 1967
 5537. sarracenica, *S. & R.* 1968
 5538. majuscula, *Cke.* ... 6055
 5539. taraxaci, *Karst.* ... 1969
 5540. sibirica, *Thum.* ... 1970
 5541. leucophæa, *Ell. &*
 Kell 6451
 5542. smegmatos, *Pass.* 1971
 5543. tingens, *Nsl.*
 5544. isariphora, *Desm.* 1972
 5545. subnivalis, *Rehm.* 6449

** *Clado-carpogonæ.*

5567. baptisiæcola, *Cke.*
 6060 6455
 5568. granulata, *Ell. &*
 Ev. 7455
 5569. melaena, *Pr.* ... 1986
 5570. plantaginis, *Sollm.* 1987
 5571. circumvaga, *Desm.* 1988
 5572. pinodes, *B. & Br.*... 1989
 5573. vesicularia, *Pass.* 6452
 5574. trifolii, *Karst.* ... 1990
 5575. calycicola, *Pass.*... 6453
 5576. astragali, *Curr.* ... 6061
 5577. lathyrina. *B. & C.*
 5578. spinarum, *Awd.* ... 1991
 5579. Passeriniana, *Sacc.* 6062
 5580. cruciferarum, *Fr.* 1992
 5581. aliena, *Pass.* ... 6063
 5582. compositarum,
 Awd. 1993
 5583. xanthicola, *C. & H.* 6454
 5584. præcox, *Pass.* ... 1994
 5585. dahliæ, *C. & Ell.* 1995
5546. venziana, *Sacc.* ... 1973
 5547. densa, *Rostr.* ... 6439
 5548. stellarinearum,
 Rabh. 1974
 5549. pulviscula, *Cocc.*... 6448
 5550. erysiphina, *B. & Br.* 1975
 5551. eryngii, *Wallr.* ... 1976
 5552. brionnensis, *S. & M.* 6457
 5553. primulæ, *Awd.* ... 1977
 5554. mariæ, *Sacc. &*
 Bonn.... ... 7454
 5555. Harknessi, *Sacc.*... 1978
 = *brachytheca*, *C. &*
 Hk.
 5556. adnata, *Nsl.* ... 1979
 5557. rumicis, *Desm.* ... 1980
 5558. rhei, *Roum.*
 5559. eucarpa, *Karst.* ... 1981
 5560. polygonorum, *Crie.* 1982
 5561. circe, *Sacc.* ... 1983
 5562. depazeæformis,
 Awd. 1984
 5563. oxalidis, *Kirsch.* ... 1635
 5564. selene, *Sacc.* ... 1985
 5565. panacis, *Cke.* ... 6053
 5566. aristotelis, *Cke.*... 7457
5586. nebulosa, *Pers.* ... 1996
 5587. trichophila, *Karst.* 1997
 5588. Winteriana, *Sacc.* 1998
 5589. pachypleuri, *Fckl.* 6456
 5590. vincetoxicis, *Sacc.* 1999
 5591. gypsophilæ, *Fckl.* 2000
 5592. euphorbiæ-spinosæ,
 Not. 2001
 5593. salicorniæ, *Awd.* ... 2002
 5594. peruviana, *Sp.* ... 2003
 5595. fuscata, *Ell.* ... 2004
 5596. sagedioides, *Wint.* 2005
 5597. umbelliferarum,
 Awd. 2006
 5598. leptasca, *Awd.* ... 2007
 5599. sciadophila, *Pass.* 2008
 5600. rubella, *Nsl.* ... 2009
 5601. Mougeotiana, *Sacc.* 2010
 5602. peregrina, *Cke.* ... 2011
 5603. minor, *Karst.* ... 2012
 5604. hyperici, *Awd.* ... 2013
 5605. gentianæ, *Nsl.* ... 2014

5606. campanulæ, <i>E. & K.</i>	5611. caulicola, <i>Karst.</i> ...	2019
5607. galatea, <i>Sacc.</i> ...	5612. micromeriae, <i>Pass.</i>	2020
5608. morphæa, <i>Sacc.</i> ...	5613. polygramma, <i>Fr.</i>	2021
5609. arthropyrenioides, <i>Awd.</i> ...	5614. nigrita, <i>Grog. F.</i> <i>Gall.</i>	1606
5610. cannabis, <i>Wint.</i> ...	5615. aristolochiæ, <i>Roum.</i>	1601

B. In *Monocotyledoneis*.

5616. schœnoprasi, <i>Awd.</i>	5646. Malinverniana, <i>Catt.</i> ...	2043
5617. allicina, <i>Fr.</i> ...	5647. phyllachoroides, <i>Sacc.</i> ...	2045
5618. cinxia, <i>Sacc.</i> ...	5648. leptopleura, <i>Not.</i>	2046
5619. matura, <i>Sacc.</i> ...	5649. ignobilis, <i>Awd.</i> ...	2047
5620. brunneola, <i>Fr.</i> ...	5650. exitialis, <i>Mori.</i> ...	6465
5621. asteroma, <i>Fr.</i> ...	5651. muhlenbergiæ, <i>Ellis</i> ...	6069
5622. smilacicola, <i>Schwz.</i>	5652. graminicola, <i>Fckl.</i>	2048
5623. subcongregata, <i>Ell.</i> & <i>Er.</i> ...	5653. perexigua, <i>Karst.</i>	2049
5624. pales, <i>Sacc.</i> ...	5654. najas, <i>Sacc.</i> ...	2050
5625. agapanthi. <i>K. & C.</i>	5655. longissima, <i>Fckl.</i>	2051
5626. iridis, <i>Awd.</i> ...	5656. luzulæ, <i>Cke.</i> ...	2052
5627. minimæpuncta, <i>Cke.</i> ...	5657. præparva, <i>Pass.</i> ...	6070
5628. caladii, <i>Schwz.</i> ...	5658. depressa, <i>Sacc.</i> ...	1709
5629. orchidearum, <i>Karst.</i>	5659. scirpi-lacustris, <i>Awd.</i> ...	2053
5630. maydis, <i>Pass.</i> ...	5660. thais, <i>Sacc.</i> ...	2054
5631. paulula, <i>Cke.</i> ...	5661. pusilla, <i>Awd.</i> ...	2055
5632. zeæ, <i>Schwz.</i> ...	5662. saxatilis, <i>Schrot.</i> ...	2056
5633. parallelogramma, <i>Rehm.</i> ...	5663. caricicola, <i>Fckl.</i> ...	1642
5634. disseminata. <i>Not.</i> 2036	5664. Wichuriana, <i>Schrot.</i>	2057
5635. chlouna, <i>Cke.</i> ...	5665. tassiana, <i>Not.</i> ...	2058
5636. californica, <i>C. & H.</i>	5666. lineolata, <i>Desm.</i> ...	2059
5637. ceres, <i>Sacc.</i> ...	5667. typhæ, <i>Lasch.</i> ...	2060
5638. bacillifera, <i>Karst.</i>	5668. incisa, <i>Ell. & M.</i> ...	6460
5639. anarithma, <i>B. & Br.</i>	5669. gastonis, <i>Sacc.</i> ...	6467
5640. philochorta, <i>Cke.</i>	5670. sabaligena, <i>Ell. &</i> <i>Er.</i> ...	7456
5641. epistroma, <i>Cke.</i> ...	5671. intercellularis, <i>B. &</i> <i>C.</i> ...	2183
5642. badensis, <i>Nsl.</i> ...	5672. lamprocarpi, <i>Pass.</i>	
5643. agrostidis, <i>Cust.</i> ...	5673. zizaniæ, <i>Schwz.</i>	4411
5644. junciginea, <i>Cke.</i>		
5645. phœnicis, <i>Ces.</i>		

C. In *Acotyledoneis*.

5674. pteridis, <i>Desm.</i> ...	5680. asplenii, <i>Awd.</i> ...	2067
5675. indistincta, <i>Peck.</i>	5681. lycopodina, <i>Karst.</i>	2068
5676. aquilina, <i>Fr.</i> ...	5682. equiseti, <i>Fckl.</i> ...	2069
5677. prominula, <i>Speg.</i> ...	5683. trichomanis, <i>Cke.</i>	6468
5678. filicum, <i>Desm.</i> ...	5684. parasitica, <i>Wint.</i>	6469
5679. tyrolensis, <i>Awd.</i> ...		

D. In Charta, &c.

5685. Karsteniana, *Speg.* 2070 5686. congregata, *Lev.* ... 2071

E. *Species minus notæ.*

- | | | | |
|-------------------------------------|------|-----------------------------------|------|
| 5687. corylaria, <i>Wallr.</i> ... | 2072 | 5699. atomus, <i>Desm.</i> ... | 2085 |
| 5688. vitis, <i>Fckl.</i> ... | 2073 | 5700. ancupariæ, <i>Lasch.</i> | 2086 |
| 5689. turba, <i>Fckl.</i> ... | 2074 | 5701. fagicola, <i>Fr.</i> ... | 2087 |
| 5690. insularis, <i>Wallr.</i> ... | 2075 | 5702. mercurialis, <i>Lasch.</i> | 2088 |
| 5691. leptidea, <i>Fr.</i> ... | 2076 | 5703. ferruginea, <i>Fckl.</i> | 2090 |
| 5692. emeri, <i>Ces.</i> ... | 2077 | 5704. subalpina, <i>Sacc.</i> ... | 2091 |
| 5693. rottleræ, <i>B. & Br.</i> | 2079 | 5705. aronici, <i>Fckl.</i> ... | 2092 |
| 5694. bonaerensis, <i>Speg.</i> | 2080 | 5706. petasidis, <i>Rabh.</i> ... | 2093 |
| 5695. arbuti, <i>Fr.</i> ... | 2081 | 5707. cerastii, <i>Fckl.</i> ... | 2094 |
| 5696. acerina, <i>Wallr.</i> ... | 2082 | 5708. perforans, <i>Desm.</i> ... | 2095 |
| 5697. mori, <i>Fckl.</i> ... | 2083 | 5709. cinereo-nebulosa, | |
| 5698. caprifoliorum. | | <i>Desm.</i> ... | 2096 |
| <i>Desm.</i> ... | 2084 | 5710. polypodii, <i>Rabh.</i> ... | 2097 |

F. *Species dubiæ.*

- | | | | |
|--|------|---------------------------------------|------|
| 5711. convallariæ-majalis, <i>Kirch.</i> ... | 4457 | 5724. herbicola, <i>Schwz.</i> | 4476 |
| 5712. leucoplaca, <i>Kirch.</i> | 4458 | 5725. excipulans, <i>Schwz.</i> | 4480 |
| 5713. cotyledonum, <i>Kirch.</i> | 4459 | 5726. collapsa, <i>Schwz.</i> ... | 4481 |
| 5714. carlinæ, <i>Kirch.</i> ... | 4460 | 5727. coptis, <i>Schwz.</i> ... | 4482 |
| 5715. macrocarpa, <i>Rabh.</i> | 4461 | 5728. corni, <i>Schwz.</i> ... | 4483 |
| 5716. asari, <i>Klot.</i> ... | 4463 | 5729. coccineo-maculata, | |
| 5717. tigrinans, <i>Schwz.</i> ... | 4464 | <i>Schwz.</i> | 4484 |
| 5718. subbullans, <i>Schwz.</i> | 4465 | 5730. andromedæ, <i>Schwz.</i> | 4485 |
| 5719. staphyleæ, <i>Schwz.</i> | 4466 | 5731. angelicæ-lucidæ, | |
| 5720. plantaginicola, | | <i>Schwz.</i> | 4486 |
| <i>Schwz.</i> | 4470 | 5732. apertinscula, <i>Schwz.</i> | 4487 |
| 5721. perignicola, | | 5733. concentrica, <i>B. & C.</i> | 4488 |
| <i>Schwz.</i> | 4472 | 5734. catalpicola, <i>Schwz.</i> | 4489 |
| 5722. nigredo, <i>Schwz.</i> ... | 4474 | 5735. dryophila, <i>Schwz.</i> | 4490 |
| 5723. mori-albæ, <i>Schwz.</i> | 4475 | 5736. kalmicola, <i>Schwz.</i> | 4491 |
| | | 5737. tulipifera, <i>Schwz.</i> | 4492 |

Sub.-Gen. A. LIZONIA. Erumpentia superficialia.

Sporidia 1 septata-hyalina.

- | | | | |
|--------------------------------------|------|-----------------------------------|------|
| 5738. emperigonia, <i>Awd.</i> | 2244 | 5744. guaranítica, <i>Speg.</i> | 6511 |
| 5739. distincta, <i>K.</i> ... | 2245 | 5745. paraguayensis, | |
| 5740. fragilis, <i>B.</i> ... | 2246 | <i>Speg.</i> ... | 6512 |
| 5741. pullulans, <i>B.</i> ... | 2247 | 5746. inæqualis, <i>Wint.</i> ... | 6513 |
| 5742. bertioides, <i>S. & B.</i> | 6509 | 5747. sphagni, <i>Cke.</i> | |
| 5743. abscondita, <i>Johan.</i> | 6510 | | |

Sub.-Gen. B. EPICYMATIA, *Fckl.* Lichenicola.*Sporidia 1 (3 ?) septata, subhyalina.*

- | | | | |
|----------------------------------|------|-----------------------------------|------|
| 5748. vulgaris, <i>Fckl.</i> ... | 2231 | 5749. mammillula, <i>Anzi.</i> | 2233 |
| =apotheciorum, | | 5750. thallina, <i>Cooke.</i> ... | 2234 |
| <i>Mass.</i> | | 5751. araneosa, <i>Rehm.</i> ... | 2235 |

5752. borealis, <i>Sacc.</i> ... 2236	5759. verrucariæformis, <i>Fckl.</i> ... 2243
5753. frigida, <i>Sacc.</i> ... 2237	
5754. thallophila, <i>Cooke</i> 2238	5760. ulothii, <i>Korb. Kunze. Exs.</i> 78
5755. hageniæ, <i>Rehm.</i> ... 2239	5761. balani, <i>Winter</i>
5756. lichenicola, <i>Mass.</i> 2240	5762. psoræ, <i>Anzi. Anal.</i> p. 27
5757. psoromatis, <i>Mass.</i> 2241	5763. Winteri, <i>Kunze Exs. No.</i> 65.
5758. massariæ, <i>Pass.</i> ... 2242	

GEN. 3. **SPHÆRULINA.** Sporidia 3-pleuriseptata.

* EU-SPHÆRULINA. *Asci aparaphysati, sporidia septata, hyalina.*

5764. myriadea, <i>D. C.</i> ... 3524	5772. sambucina, <i>Peck.</i> 7044
5765. serograptæ, <i>D. R.</i>	5773. potentillæ, <i>Rostr.</i> 7046
& <i>M.</i> ... 3525	5774. subglacialis, <i>Rehm.</i> 7047
5766. fraxinea, <i>S.</i> & <i>S.</i> 3526	5775. Boudieriana, <i>S.</i> & <i>M.</i> ... 7048
5767. umbilicata, <i>S.</i> & <i>M.</i> 3527	5776. caricis, <i>Pat.</i> ... 7049
5768. Leightoni, <i>Berk.</i> ... 3532	5777. assurgens, <i>Cke.</i> ... 7494
5769. vaginæ, <i>Lasch.</i> ... 1647	5778. todeæ, <i>Cke.</i> ... 7045
5770. islandica, <i>Rostr.</i> ... 7043	5779. acetabulum, <i>B.</i> ... 1625
5771. cryptospila, <i>B.</i>	

** METASPHERIA. *Asci paraphysati.*

† Sporidia 2-4 septata.

5780. papulosa, <i>D. R.</i> & <i>M.</i> ... 3453	5789. empetri, <i>Fr.</i> ... 3463
5781. helicicola, <i>Desm.</i> ... 3454	5790. vincæ, <i>Fr.</i> ... 3464
5782. hederæ, <i>Sow.</i> ... 3455	5791. hederæfolia, <i>Cke.</i> 6148
5783. nobilis, <i>Sacc.</i> ... 3456	5792. xerophylli, <i>Ell.</i> ... 6149
5784. immunda, <i>K.</i> ... 3457	5793. Lieuryana, <i>Mall.</i> 7034
5785. acerum, <i>Crie.</i> ... 3458	5794. molleriana, <i>Nsl.</i> ... 7035
5786. acuum, <i>C.</i> & <i>E.</i> ... 3459	5795. caraquata, <i>Speg.</i> ... 7036
5787. palustris, <i>M.</i> ... 3461	5796. cerabidis, <i>Joh.</i> ... 7037
5788. cynaraceum, <i>Nsl.</i> 3462	5797. nervisequia, <i>Wint.</i> 7039

†† Sporidia 5-pleuriseptata.

5798. pachyasca, <i>Nsl.</i> ... 3465	5799. Peckii, <i>Speg.</i> ... 3466
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* ** LEPTOSPHÆRELLA. *Asci paraphysati, sporidia septata, leniter colorata.*

† Sporidia 2-4 septata.

5800. uliginosa, <i>P.</i> & <i>P.</i> 3020	5806. aglaia, <i>S.</i> ... 3026
5801. silenæ-acaulis, <i>Not.</i> 3021	5807. austro-americana, <i>Sp.</i> ... 3027
5802. Hausmanniana, <i>Awd.</i> ... 3022	5808. Plemeliana, <i>N.</i> ... 3028
5803. sabauda, <i>Speg.</i> ... 3023	5809. primulæcola, <i>Wint.</i> 3029
5804. minima, <i>Duby.</i> ... 3024	5810. subsecta, <i>Wint.</i> ... 3030
5805. lathonia, <i>S.</i> ... 3025	5811. andromedæ, <i>Awd.</i> 3031

5812. collumiæ, <i>B. & C.</i> 3032	5820. hedericola, <i>Desm.</i> 3040
5813. salicinearum, <i>Pass.</i> 3033	5821. lucina, <i>Sacc.</i> ... 3041
5814. dryadæ, <i>Sacc.</i> ... 3034	5822. lucilla, <i>Sacc.</i> ... 3042
5815. Decaisneana, <i>Cke.</i> 3035	5823. marginalis, <i>Sacc.</i> 3043
5816. dryophila, <i>C. & H.</i> 3036	5824. vinealis, <i>Pass.</i> ... 3044
5817. ægira, <i>S. & S.</i> ... 3037	5825. camilleæ, <i>C. & M.</i>
5818. coffeigena, <i>B. & C.</i> 3038	5826. helichrysi, <i>C.</i>
5819. diana, <i>S. & S.</i> ... 3039	

†† *Sporidia* 5 septata.

5827. Passerinii, <i>Sacc.</i> ... 3045	5832. australis, <i>Crie.</i> ... 3050
5828. ærea, <i>Sp.</i> ... 3046	5833. citricola, <i>Penz.</i> ... 3051
5829. pulchra, <i>Wint.</i> ... 3047	5834. yulani, <i>Sacc.</i> ... 3052
5830. camilla, <i>Schw.</i> ... 3048	5835. pomona, <i>Sacc.</i> ... 3053
5831. marginata, <i>N.</i> ... 3049	5836. acicola, <i>Fckl.</i> ... 3054

††† *Sporidia* 7-10 septata.

5837. vinosa, <i>Sp.</i> ... 3055	5838. alcides, <i>Sacc.</i> ... 3056
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GEN. 4. **LINOSPORA.** *Sporidia* filiformia, hyalina.

5839. procumbens, <i>Fckl.</i> 4092	5848. leucospila, <i>B. & C.</i> 4101
5840. tremulæ, <i>Morth.</i> ... 4093	5849. elata, <i>S. & S.</i> ... 4102
5841. candida, <i>Fckl.</i> ... 4094	5850. insularis, <i>Joh.</i> ... 7145
5842. conflictæ, <i>Cke.</i> ... 4095	5851. ferruginea, <i>Ell. & M.</i> ... 7146
5843. ochracea, <i>Desm.</i> ... 4096	5852. viburni, <i>Buck.</i> ... 7147
5844. ischnotheca, <i>Desm.</i> 4097	5853. guaranitica, <i>Speg.</i> 7148
5845. magnagutiana, <i>Sacc.</i> ... 4098	5854. linosporoides, <i>Speg.</i> ... 4062
5846. faginea, <i>Sacc.</i> ... 4099	5855. tanacetii, <i>Fckl.</i> ... 4063
5847. carpini, <i>Schrot.</i> ... 4100	

AUSTRALIAN FUNGI.

By M. C. COOKE.

Pestalozziella circulare, *Cke. & Mass.*

Developed on both surfaces of the leaves. Pseudo-perithecia usually disposed in circles, a little convex, and at length splitting irregularly, at first brown, then nearly black and shining, resembling *Phyllachora*. Conidia cylindrically elliptical, 30-34 × 8-10 μ , hyaline, continuous, with granular contents, furnished at the apex with a single hyaline seta, base with a short thick pedicle, and usually 3 or 4 divergent hyaline hairs at the base of the spore.

On dead leaves of *Eucalyptus parviflora*. (*Mrs. Martin*, 480, 485, 486.)

Asterina (Asterella) Alsophilæ, Cke. & Mass.

Perithecia membranaceous, discoid, suborbicular, mostly confluent in oblong or irregular patches, pitchy-black, cellules radiating, mostly dentate at the margin. Asci pear-shaped, or shortly clavate, octosporous. Sporidia elliptical, uniseptate, unequal, the lower cell double the length of the upper, and a little attenuated, $9-10 \times 4.5 \mu$ hyaline.

On *Alsophila rebeccæ*. N.E. Queensland. (*Baron Muller.*)

Phacidium (Fabræa) rhytismoideum, Cke. & Mass.

Cups clustered together upon a kind of pseudo-stroma in the centre of the leaves, usually 6 to 8, minute, externally dark brown, disc pallid, cinereous, closing in drying, and wholly becoming pitchy brown, nearly black, and then resembling a *Rhytisma*. Asci clavate with numerous paraphyses. Sporidia cylindrical, obtuse at the ends, uniseptate, hyaline, $16-18 \times 3-4 \mu$.

On living leaves of *Cotula*. Macedon. (*Mrs. Martin.*)

WOOLHOPE CLUB TRANSACTIONS.

The ninth volume of these Transactions has just been issued, including the years 1883-4-5, and although some of the papers seem now to be matters of ancient history, the volume is welcome, not least for the excellent photograph of the late Dr. H. G. Bull. The heavy cost of the publication of the "Pomona" caused the Transactions to be set aside from year to year, but now that the "Herefordshire Flora" is issued, it is to be hoped that the succeeding three years—1886-7-8—will soon make an appearance, and then the arrears will be fairly disposed of. Criticism of the papers in the present volume is out of the question, but it may be well to name the titles of the principal communications which come within the province of this journal. "The Salmon Disease," by H. C. Moore; "On some Species of *Tricholoma* not easily distinguished from each other," by Canon Du Port; "On the colours of Fungi as indicated by the Latin words used by Fries," by Canon Du Port; "Mr. Jensen and the Potato Disease," "Wheat Mildew Legislation," and "Heteræcismal Fungi," by C. B. Plowright; "On Alkaloids, &c., extracted from Fungi," by C. G. Stewart; "The *Chroolepus Iolithus*," by Edwin Lees; "Notes on the Edible Fungi of Italy," by A. S. Bicknell; "On Fries's Nomenclature of Colours," by H. T. Wharton; "British species of *Nidularia*," by W. Phillips; "Researches into the Oospores of some Fungi," by J. E. Vize; "Gigantic Fungi," by M. C. Cooke; "The Genus *Pestalozzia*," by J. E. Vize; "The Vegetable Caterpillar," by Dr. Bull; the whole concluding with a neat "In Memoriam" dedicated to the "father of the Woolhope Club." We congratulate the present editor, Mr. H. Cecil Moore, on the energy with which he is pushing forward the publication of the back Transactions, and the care with which he supervises their production.

BRITISH DISCOMYCETES.

Notes and Additions No. 2.

BY WILLIAM PHILLIPS, F.L.S.

***Peziza perlata*, Fr.**

Cups large, shortly stipitate, at first subglobose, then expanded, undulate, splitting at the margin; externally white, even; hymenium wrinkled, pale cinnamon; stem stout, lacunose, white; flesh thick; asci cylindraceo-clavate, attenuated below the sporidia, truncate at the summit; sporidia 8, elliptic, pale brown, smooth, $15-20 \times 10-12 \mu$; paraphyses numerous, rather stout, septate, guttulate, broadly clavate at the summit, brown.

Peziza perlata, Fries Sys. Myc. ii., 43; Karst. Myco. Fenn. p. 39; Cooke Myco. fig. 239. *Discina perlata*, Fries, Sverige Svampar, t. 56.

Exs. Karst. Fung. Fenn. 531.

On burnt charcoal beds.

Cups $2\frac{1}{2}$ in. broad before expanding, $3\frac{1}{2}$ in., or even more, when expanded. Stem $\frac{1}{2}$ in. long, $\frac{3}{4}$ in. broad; flesh at base of cup $\frac{1}{2}$ in. thick, near the margin 1 line thick. The sporidia are pale brown, and homogeneous within. Karsten found the sporidia in his specimens elliptic or fuso-elliptic, and 1-3 guttulate, neither of which characters were present in my specimens. Still, I have no doubt they are correctly referable to this species.

I am indebted for this handsome plant to the kindness of my friend, the Rev. G. H. Sawyer.

Near Guildford, Surrey! December, 1888.

***Mollisia atrata*, β . *Ebuli* (Fr.).**

Erumpent, gregarious, minute, sessile, at first globose, urceolate, at length expanded, concave, cinereous-black, margin thin, paler; hymenium when moist cinereous, when dry black; asci cylindraceo-clavate, broad at the base; sporidia 8, sub-clavate or sub-cylindrical, simple, 8, $10 \times 2-2, 5 \mu$; paraphyses filiform, slender, sparse.

Peziza atrata, β *Ebuli*, Fr. Sys. Myc. ii., p. 148; *Pyrenopeziza atrata*, β *Ebuli*, Fekl. Symb. p. 294.

Exs. Fekl. F. Rh. 1869.

On dead stems of *Sambucus ebulus*. July.

The cups are $200-500 \mu$ broad ($.2-.5$ mm.), and at first covered by the epidermis, which at length is ruptured by them. The asci are $40-50 \mu$ long, $7-8 \mu$ broad. The pseudo-parenchyma of the cup passes near the margin into a nearly colourless fibroso-cellular tissue, as in all this group.

Middlehope, Shropshire!

Mollisia vulgaris (Fr.).

Sessile, crowded, sub-caespitose, concave, membranaceous; white, yellowish-white, or pallid, glabrous; asci clavate; sporidia 8, cylindraco-oblong, sometimes curved, $5-7 \times 1, 5 \mu$; paraphyses slender.

Peziza vulgaris, Fries (in part), Sys. Myc., ii. p. 146; Karsten Pez. et Ascob. p. 39; Nyl. Pez. Fenn. p. 59; *Helotium albellum* (with) Karst. Myco. Fenn. 116; Rev. Asco. Acta Sc. F. F. Fenn. 11, n. 6; *Pezizella Avellanae* (Lasch.), Fckl. Symb. Myco. 299; *Mollisia vulgaris*, Gillet Champ. p. 119.

Exs. *Peziza vulgaris*, Desm. Crypt. Fr. ed. i., 1065; ed. ii., 465.

Peziza avellanae, Lasch., Rabh. Fung. Eur. 28; Fckl. F. Rh. 2079; *Helotium albellum*, Rehm's Asco., 63.

On dead branches of *Corylus Avellana*.

The cups are $\frac{1}{4}$ to $\frac{1}{2}$ a line broad, usually caespitose, rarely sub-stipitate, bursting through the bark in little tufts; very thin and membranaceous; margin bent upwards, even. The colour is whitish, the surface smooth. The tissue of the cup is composed of connate slender filaments. I have not been able to detect sporidia in the British specimens. The dimensions given above are from Dr. Nylander.

Shere. Dr. E. Capron! Carlisle! Dr. Carlyle.

Lachnea mirabilis (Bor.).

Growing singly, or several from the same base. Cup fleshy, explanato infundibuliform, rather fragile, externally whitish-tomentose, as is the rooting stem, which is enlarged upwards; margin elegantly crenato-incised, apices of the crenatures rounded, reflexed, somewhat revolute; disc umbilicate, beautifully bright crimson; asci cylindrical; sporidia elliptic 3-5 guttulate, $33-35 \times 13-17 \mu$; paraphyses linear, septate, coloured with scarlet granules.

Peziza mirabilis, Borszczow, in Fungi Ingrici p. 61, t. iv. and v. Cooke Mycogr. fig. 98.

In shady woods, amongst pine leaves. May.

The height of the British specimens of this beautiful species is about $1\frac{1}{4}$ inches, and the stem is clothed with slender white hairs.

Growing in clusters of two to six among grass on the banks of the Dee near Ballater, N.B.! April. Professor James W. H. Trail.

Lachnea confusa (Cooke).

Gregarious, sessile, subspherical, at length hemispherico-depressed, or convex, externally brown, clothed with short, fasciculate, brown, septate hairs; hymenium the same colour; asci cylindraco-clavate; sporidia 4-8, globose, uniguttulate, smooth, 13μ ; paraphyses filiform, slightly enlarged at the summit, filled with red granules.

Peziza confusa, Cooke in Bull. Buff. Ac. Sci., 1875, 291; Myco. Fig. 124. *Peziza brunnea*, Nyl. Obs. p. 21; Karst. Myc. Fenn. p. 75; Grevillea iii., fig. 98a.

Exs. Karst. Fung. Fenn. 528.

On burnt soil. October.

Cups 2-6 mm. broad, partly immersed in the soil, having numerous brown, septate, entangled hairs at the base, the upper exposed surface and the margin clothed with short, stout, brown, fasciculate hairs, from 30 to 70 μ long, and 3-7 μ thick, tapering towards the summit. The cells of the pseudo-parenchyma are about 10 to 15 in diameter, but vary above this size in some individuals. It is very near *Peziza schizospora*, the chief difference being the hairy surface of the cup.

I am indebted to Mr. W. Stewart, of Glasgow, for specimens of this interesting addition to our flora.

Epping Forest. Mr. W. Stewart.

***Lachnella virginea* (Batsch).**

***β . selecta*, Karst.**

Differs from the type in the larger cups ($\frac{1}{2}$ a line), the somewhat thicker, longer ($\frac{1}{2}$ line to $1\frac{1}{2}$ lines), and more flexuous, stem; sporidia 4-11 \times 1-2 μ , paraphyses 4 μ thick.

Peziza selecta, Karst. Monogr. Pez. p. 192; *Lachnum selectum*, Karst. Myco. Fenn. p. 170.

On back and cones of *Pinus* and *Abies*. July to October.

Hampton-in-Arden! Mr. W. B. Grove. 1884.

***Lachnella grisella* (Rehm).**

Cups scattered shortly stipitate, turbinate, greyish, inclining to brown, clothed with pale brownish, or sub-hyaline, flexuous, simple hairs; tissue prosenchymatous; asci clavate, sub-acute at the apex, sometimes curved; sporidia 8, oblong-clavate, straight, or a little bent, biseriate, 7-9 \times 2-2, 5 μ ; paraphyses filiform, slender, hyaline.

Helotium grisellum, Rehm., Hedwigia, 1885.

Exs. Rehm's Asco. No. 766.

On dead fronds of *Pteris aquilina*. August.

Dr. Rehm justly remarks that this is a very difficult species to detect, nestling on the underside of the leaf amongst the hairs. The cups are about 400 μ broad and 300 μ high, substipitate or sessile, margin fringed with simple, colourless hairs 25 μ long 2 μ broad; the asci are 35 \times 5 μ . This is near *Lachnella aspidincola* (B. & Br.), but has a shorter stipes, is a darker colour, and has larger sporidia.

The Isle of Orkney! Professor J. W. H. Trail. 1888.

***Lachnella callimorpha* (Karst).**

Gregarious, sessile, or shortly stipitate, tomentose; cups somewhat plane, when dry spherical, or hemispherical, contracted; hymenium yellow, or orange yellow; asci cylindrical-subclavate; sporidia 8, biseriate, linear fusiform, with 6-8 guttule, or spuriously pluriseptate, straight, 17-20 \times 1, 5-2 μ ; paraphyses acerose.

Lachnea callimorpha, Karst. Symb. p. 250; *Lachnum callimorpha*, Karst. Myco. Fenn. p. 173.

Exs. Karst. Fung. Fenn. 835.

On leaves of *Eriophorum angustifolium*. April.

Cups 300-500 μ broad. The hairs of the cup are colourless, straight, 40-50 μ long, and about 4 μ broad, obtuse, simple, and granular within.

Near Aberdeen! April 28, 1887. Professor Jas. W. H. Trail. No. 26.

***Lachnella puberula*, Lasch.**

Minute, scattered, or gregarious, sessile, plane, or slightly concave, minutely pubescent, white, asci clavate; sporidia 8, oblongo-elliptic, or sub-fusiform, hyaline, 7-10 \times 3-4 μ ; paraphyses slenderly filiform, sparse.

Peziza puberula, Lasch in Klotzch Herb. Myco.

Pseudohelotium puberulum, Fekl. Symb. p. 298.

Exs. Klotzch Herb. Myc. No. 1529; *Helotium puberulum*, Fekl. F. Rh. 1150; Cooke Fung. Brit. ed. i., 574.

On fallen oak leaves. Autumn and winter.

Cups 300-400 μ broad; the hairs are slender, simple, short, hyaline, deciduous with age, 3-4 μ long, 2 μ broad. Nearly allied to *Lachnella fugiens*, but differing in the larger asci and sporidia.

Handsworth, near Birmingham! Mr. W. B. Grove, King's Norton! W. B. Grove.

***Patellaria sphærospora*, B. & C.**

Scattered or crowded, applanate, margined, black, rather thin; asci cylindracco-clavate; sporidia 8, sub-spherical, elliptic, or sub-pyriform, brown, uni-guttulate, 7-9 μ or 10 \times 6 μ ; paraphyses filamentous.

Patellaria sphærospora, B. & C. Cooke Disco. U.S. p. 26 (without description). Kew Herbarium No. 4460; Herb. Berk.; Sacc. Sylloge p. 790.

On dead wood.

Cups $\frac{1}{2}$ to 1 line broad: the variable form of the sporidia is remarkable.

This species of Berkeley and Curtis, found by the latter in Lower Carolina, U.S., original specimens of which exist in the Kew Herbarium, has occurred in the New Forest, Hampshire, and was sent me in March last by Miss Beatrice Taylor, Old House, Ringwood.

***Schmitzomyia Luzulæ* (Lib.).**

var. ***Junci*, Karst.**

Scattered, erumpent, then more or less protuberant, orbicular, urceolate, at first closed, then open; whitish, margin nearly entire, powdery-white; hymenium rosy, or pale orange colour; asci cylindrical; sporidia 8, filiform, adherent, multiseptate, 120-130 \times 1-1.5 μ ; paraphyses abundant, slenderly filiform.

Schmitzomyia Luzulæ, var. *Junci*, Karst. Myco. Fenn. p. 238; *Stictis Luzulæ*, var. *Junci*, Karst. Revisio Mon. p. 166. Sacc. Syll. p. 692.

Exs. Karsten Fung. Fenn. No. 931.

On culms of *Juncus conglomeratus*. Autumn.

Orkney (?)! Professor James W. H. Trail.

Phacidium terrestre, Niessl.

Gregarious; receptacle turbinate or fig-shaped; excipulum between leathery and membranaceous, chestnut-brown, at first closed, at length opening with a lacinate margin; hymenium undulated, sulphur yellow; asci clavate, attenuated into a stem, broadly rounded at the summit; sporidia 8, uniseriate, oblong, unequal, simple, continuous, or sometimes divided by one or two guttulæ, hyaline, $11-13 \times 4-5 \mu$; paraphyses the length of asci, bifurcate at the apices.

Podophacidium terrestre, Niessl, Forhandl. Natur. Band. x. (1871), p. 213, t. v., f. 50.

On damp ground, amongst decayed leaves, etc.

Receptacle $1-1\frac{1}{2}$ lines broad, and $\frac{1}{2}$ to 1 line high; the asci $124-136 \times 8-9 \mu$. The sporidia are very rarely guttulate, and occasionally a sporidium is seen similar to the left hand figure of Niessl, in which there appears near the poles a contraction of the protoplasm, as though it were constricted. The paraphyses are slenderly filiform, often branched near the summit, where they are slightly thickened and curved downwards. There appears no necessity for creating a new genus for this.

Near Carlisle! Dr. Carlyle.

SOME EXOTIC FUNGI.

By M. C. COOKE.

Sphærella (Læstadia) palustris, Fr. in *Duby Bol. Gall.* ii., 710.

Hypophylla, sparsa. Peritheciis innatis, epidermide tectis, punctiformibus, nigris, nitidis, convexis, centro prominulo. Ascis cylindraceis sporidiis suballantoideis, hyalinis, $10 \times 2 \mu$. *Desm. Exs. No.* 365.

On leaves of *Caltha palustris*. France.

Lizonia Sphagni, Cooke.

Perithecia scattered, subglobose, black, rather prominent, with a mamillate ostiolum, seated on the decayed leaves, and soon becoming subsuperficial. Asci clavate, sporidia cylindrical, slightly carved at one or both ends, uniseptate (then probably triseptate), hyaline, colourless, $40-50 \times 8 \mu$.

On dead *Sphagnum*. Maine, U.S.

1695* Valsa (eutypella) clavulata, Cooke.

Stromate valseo, e basi orbiculari, conico, obtuso, cortice innato, peritheciis 12-20 congestis; ostiolis elongatis, clavulatis, 4-5 sulcato-rugosis, exsertis, atris, opacis. Ascis clavatis ($30 \times 10 \mu$),

octosporis. Sporidiis allantoideis, minutissimis, $3-4 \times 1 \mu$ vel minoribus, hyalinis.

In cortice *Ailanthi*. Staten Island (*Mrs. Britton*).

Pustules much more numerous than in *Valsa glandulosa* and sporidia smaller. Moreover, the elongated beaks are distinctly sulcate. It differs entirely in habit from *Eutypella ventriosa*, C. & E., and *Eutypella ailanthi*, Sacc., as well as in the very minute sporidia. Superficially it resembles *Valsa ceratophora*, Tul.

Discella palmicola, Cke. & Mass.

Peritheciis spuris, supra obsoletis, dein patellatis, erumpentibus, atris, initio epidermide tectis, dein lacerato-fissuratis, conidiis ellipticis, uniseptatis, nec constrictis, purpureo-fuscis, $24-30 \times 9-12 \mu$.

On palm petioles. Madagascar.

Analogous to *Diplodia*, but with an incomplete or pezizæform receptacle.

ON CAMPBELLIA, GEN. NOV.

By M. C. COOKE.

Two species of large stipitate Fungi have been communicated from Africa and Australia, which it hardly seems possible to include in any known genus of Hymenomycetes. The hymenium and spores resemble *Merulius* rather than *Laschia*. The habit is that of *Boletus*, the substance gelatinous, becoming horny, and all the features suggesting a link between *Boletus* and *Laschia*. From *Merulius* it differs in the deeper pores, stipitate form, and fleshy pileus. From *Laschia* in its more fleshy character, more decided pores, with thin membranaceous dentate dissepiments, more or less lacunose interior (at least when dry) and terrestrial growth. From *Boletinus* in its tremellose, almost gelatinous substance.

GENUS **CAMPBELLIA**, Cke. & Mass.

Fleshy, soft, tremellose, horny when dry, pileate and stipitate; hymenium inferior. Flesh more or less lacunose (especially when dry), spongy. Pores large, angular, usually toothed or serrate at the edge, rather deep, with thin flaccid dissepiments. Trama descending. Spores elliptical, brown.

Name from Miss F. Campbell (*Mrs. Martin*), an enterprising Australian mycologist, who communicated one of the species.

1. **Campbellia infundibuliformis**, Cke. & Mass. = *Merulius infundibuliformis*, C. & M. *Grer.* XVI., p. 73. *Sacc. Syll.* No. 6523.

On the ground (?). Yarra, Australia.

2. **Campbellia africana**, Cke. & Mass.

Expanded, convex, then depressed in the centre (4 in. diam.), dark coloured, becoming purplish-black and horny when dry. Stem short, thick ($2 \times 1-2$ in.), attenuated downwards, solid, or

lacunose when dry. Pores broad, shallow, irregular, toothed at the edge, dessepiments thin, flaccid; spores elliptical ($7.8 \times 4 \mu$), pale brown.

On the ground. Botanic Garden, D'Urban (*Wood*, 826, 4107).

MEMORABILIA.

FLORA OF WARWICKSHIRE.—Mr. J. E. Bagnall's "Flora of Warwickshire" is now announced at the price of 12s. 6d. to subscribers. Names to be forwarded to J. E. Bagnall, 84, Witton Road, Aston, Birmingham. Afterwards the price will be raised.

COOKE'S ILLUSTRATIONS OF FUNGI.—Parts 1 to 59 form six volumes; parts 62 to 72 constitute Vol. vii., for which titles and index are issued in part 73. Then Vol. viii. or supplement will contain parts 41, 60, 61, 73, 74, and 75, with Title and Indices. The whole work will thus be completed during the current year.

POLYPORUS PHLEBOPHORUS, *Berk.*, *Flora N. Zealand.*—Without doubt the *Polyporus niveicolor* of Coleiso is the same species as the above, when compared with authentic specimens. The figure in the Flora of New Zealand is not by any means good, but the type specimens are in existence, from which the drawing was made.

BERKELEY LIBRARY.—The library of the late Rev. M. J. Berkeley has passed into the hands of Mr. John Wheldon, of 58, Great Queen Street, London, E.C., and will shortly be disposed of, Catalogue being already in course of preparation.

POLYPORUS (FRONDOSI) SPARASSOIDES (*Speg.*).—By some remarkable oversight the specimens No. 3352 in Balansa Plantas du Paraguay, called *Thelephora sparassoides*, *Speg.*, *Fung. Guar.* Pug. i., p. 36, are really a frondose *Polyporus*, with very shallow, sometimes nearly obsolete, pores, and small colourless spores, about $3 \times 2 \mu$.

GREVILLEA NOTICE.—Unfortunately a large proportion of the stock of back numbers has been damaged by fire and water, so that it is advisable to complete sets at once, as certain numbers will become scarce.

PEZIZA AURIFLAVA, *Cooke.*—This very distinct species of the section *Humaria* has been found by Mr. E. Pearl, on clay soil at Helston in Cornwall. For the first time in Britain.

INTRODUCTION TO FRESH WATER ALGÆ.—One of the volumes of the International Scientific Library in progress on this subject, by M. C. Cooke, will be published shortly. It will include descriptions of all the British genera and species, with figures of all the genera, on 13 plates. The publishers are Messrs. Kegan Paul, Trench, Trübner and Co., and the price is five shillings.

BRITISH PYRENOAMYCETES.

By G. MASSEE.

(Continued from p. 60.)

GEN. 8. **PLEOSPORA.** Perithecia naked, sporidia muriform.

* EU-PLEOSPORA. *Sporidia coloured.*

A. On *Dicotyledons.*

† *Sporidia 3 septate.*

P. bardanæ, *Nsl.*, *Sacc. Syll.* 3714.

On *Buddleia globosa*, Kew.

†† *Sporidia 5 septate.*

P. vulgaris, *Nsl.*, *Sacc. Syll.* 3720; *Hdbk.* 2692.

On herbs. Common.

P. verecunda, *Curr.*, *Sacc. Syll.* 3725; *Hdbk.* 2645.

On sticks. Batheaston.

P. meliloti, *Rab.*, *Sacc. Syll.* 3727.

On *Medicago sativa* and *Melilotus officinalis*. King's Lynn, Kew.

P. platyspora, *S.*, *Sacc. Syll.* 3729.

On *Euphorbia*. Darenth.

††† *Sporidia 7 septate.*

P. herbarum, *P.*, *Sacc. Syll.* 3750; *Hdbk.* 2692.

On herbs. Common.

P. pisi, *Sow.*, *Sacc. Syll.* 3731; *Hdbk.* 2692 a.

On leguminous plants. Common.

P. salsolæ, *Fekl.*, *Sacc. Syll.* 3732.

On *Salicornia*. Bungay.

P. dianthi, *Not.*, *Sacc. Syll.* 3738.

On *Dianthus deltoides* and *Arenaria peploides*. Yarmouth, Shrewsbury.

P. denotata, *C. & E.*, *Sacc. Syll. n.* 3740.

On *Glaucium fulvum*. Kew.

P. rubicunda, *Nsl.*, *Sacc. Syll.* 3744.

On *Juncus*, putrid grass, and rotten wood. Lynn; Brandon.

B. On *Fruits.*

P. leguminum, *Wallr.*, *Sacc. Syll.* 3754; *Hdbk.* 2692 γ.

On leaves and fruit of leguminous plants. Common.

C. On *Monocotyledons.*

† *Sporidia 3 septate.*

P. culmorum, *Cke.*, *Sacc. Syll.* 3789.

On culms of grass. Irstead; Hasbro'.

- P. typhicola*, Cke., *Sacc. Syll.* 3794.
On *Typha angustifolia*. N. Wootton.

†† *Sporidia* 5 septate.

- P. infectoria*, Fekl., *Sacc. Syll.* 3798.
On various grasses. King's Lynn.
- P. spargani*, Cke.
On *Sparganium*. N. Wootton.
- P. scirpicola*, D. C., *Sacc. Syll.* 3799 ; *Hdbk.* 2650.
On *Scirpus*, *Typha*, and *Carex*, sp. Common.
- P. junciginea*, Cke.
On culms of species of *Juncus*. N. Wootton.

CRYPTOGAMIC LITERATURE.

GILLET, C. C. Champignons de France, Hymenomycetes, fasc. 16.

BARCLAY, A. Descriptive list of the Uredineæ of Western Himalayas, Part ii., Puccinia. Calcutta.

BARCLAY, A. A Chrysomyxa on Rhododendron arboreum (*C. himalense*).

BARCLAY, A. On the Life History of a Uredine on Rubia cordifolia (*Puccinia Collettiana*).

BARCLAY, A. On the Life History of a Himalayan Gymnosporangium (*G. Cunninghamianum*.)

BUCKNALL, C. Fungi of the Bristol District, Part xi.

MASSEE, G. A Monograph of the genus *Podaxis* in "Journal of Botany," February, March, 1890.

THUEMEN, F. VON. Russkhan und Schwarze.

FISCHER, DR. E. Untersuchungen zur vergleichenden Entwicklungsgeschichte und Systematik der Phalloideen, in "Denkschrift Schweiz Naturf. Ges."

GUTWINSKIEGO, R. Materyjaly do Flory Glonow Galicyi, Part ii., "Algæ"

LUCAND, Capt. Figures Peintes de Champignons de la France, Part xii.

ARDISSONE, FR. La divisioni primaria del regno vegetale.

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Tribe 4. Dermocybe. Fr. Epicr. p. 283.

Dermocybe, from *δέρμα* = skin, and *κεβή* = the head.

Pileus thinly and equally fleshy, at first silky from an innate down, but when full grown becoming smooth, dry, not hygrophanous, flesh when moist watery or coloured, stem equal or attenuated downwards, externally more rigid, elastic, or fragile, internally stuffed or hollow. Veil simple, fibrillose.

* *Gills at first whitish or pallid.*

950. Cortinarius (Dermocybe) ochroleucus. *Schæff. Icon. t. 54.*

O'chro-leucus, from *ὄχρος* = yellowish, and *λευκός* = white.

Pileus fleshy, convex, gibbous, then *obtuse, even*, nearly smooth, pallid-white; stem *solid, firm, ventricose*, white, fibrillose above, veiled; gills adnexed, nearly free, crowded, whitish, clay-coloured ochre.—*Fr. Hym. Eur. 366. Cooke Illus. t. 775.*

In woods.

Pileus 2 in. broad. Stem 3 in. long, 4-5 lines thick. Spores $8 \times 4.5 \mu$.

951. Cortinarius (Dermocybe) decumbens. *Pers. Syn. 286.*

Decumbens = lying down; referring to the stem.

Pileus fleshy, convex, then expanded, even, becoming smooth, *white*, then yellowish, shining, stem stuffed, then hollow, *clavately bulbous, ascending*, smooth; gills adnexed, crowded, at first clay-coloured.—*Fr. Hym. Eur. 366. Cooke Illus. t. 816 A.*

In grassy places.

Pileus $1-1\frac{1}{2}$ in. Stem 2 in. long, and unequal, pruinose at the apex. Spores $8 \times 5 \mu$.

952. Cortinarius (Dermocybe) tabularis. *Fr. Hym. Eur. 367.*

Tabularis, from the flat pileus; *tabula* = a board or table.

Pileus fleshy, equal, soon plane, *flocculose, then smooth*, brownish clay-coloured, becoming pale; stem stuffed, tough, elastic, white, closely fibrilloso-squamose or smooth; gills *emarginate*, crowded, whitish, then clay-coloured.—*Cooke Illus. t. 783.*

In woods.

Larger, paler, and smoother than *C. anomalus*.

953. Cortinarius (Dermocybe) camurus. *Fr. Hym. Eur. 367.*

Camurus, from *camur* = crooked; from the curved stem.

Fragile. Pileus fleshy, thin, gibbous, becoming smooth, unequal, brownish, then growing pallid; stem rather hollow, equal, curved, white within and without, silvery and shining above; gills

somewhat adnate, crowded, thin, clay-coloured, grey then brownish.—*Cooke Illus. t. 784.*

In woods.

Stem 3-4 in. \times 3-4 lines; pileus 2-3 in. broad, smooth, not hygrophanous, yellowish, disc darker, flesh white; gills 2-3 lines broad. Spores $8.9 \times 6.7 \mu$.

954. Cortinarius (Dermocybe) diabolicus. *Fr. Hym. Eur. 367.*

Diabol'icus = fiendish; because of its dubious claim to its position here.

Pileus fleshy, thin, hemispherical, obtuse, then gibbous, *becoming dusky, clothed with grey threads*, at length smooth, yellowish tawny; stem stuffed, rather thin, smooth, growing pale, bluish-grey above; gills sub-emarginate, adnexed, crowded, pallid (whitish or fugacious blue-grey), then clay-coloured.—*Cooke Illus. t. 816 B.*

In woods.

Spores 10.12×7 .

*** Gills at first violet, becoming purple.*

955. Cortinarius (Dermocybe) caninus. *Fr. Hym. Eur. 368.*

Caninus, from *canis* = a dog. Canine here seems to mean common; *cf. dog* Latin.

Pileus fleshy, convexo-plane, obtuse, *becoming smooth, bright-rufous*, changing colour; stem clavato-bulbose, elastic, closely fibrillose, pallid, violaceous above; gills emarginate, broad, rather distant, purplish, then cinnamon.—*Saund. and Sm. t. 15. Cooke Illus. t. 765.*

In woods.

Pileus 3-4 in. broad. Spores 8×6 .

956. Cortinarius (Dermocybe) myrtilinus. *Fr. Hym. Eur. 368.*

Myrtilli'nus, adj. from *myrtus* = myrtle. From its myrtle-brown colour.

Pileus fleshy, gibbous, then flattened, fuliginous, becoming hoary with white silky fibrils; *stem stuffed, bulbous, silky*, without zone, whitish; gills adnate, *somewhat distant, amethystine blue*, then bluish and clay-coloured.—*Bolt. t. 147* (see Fries). *Cooke Illus. t. 817.*

In woods.

Colour and habit of *Ag. nudus*. Spores $10 \times 5 \mu$.

957. Cortinarius (Dermocybe) azureus. *Fr. Hym. Eur. 368.*

Azur'eus = sky-blue.

Pileus fleshy, obtuse, silky shining and atomate, lilac, becoming hoary; stem stuffed, *smooth, finely striate*, thickened at the base,

villous, becoming whitish; gills rather crowded, bright blue, then violet.—*Cooke Illus. t. 766.*

In beech woods.

Solitary: Pileus $1\frac{1}{2}$ -2 in. broad. Stem 3 in. long, 4 lines thick. Gills 2 lines broad. Spores $9 \times 6 \mu$.

958. Cortinarius (Dermocybe) albo-cyaneus. *Fr. Hym. Eur. 368.*

Albo-cyan'eus, from *albus* = white, and *cyaneus* = sky-blue.

Pileus fleshy, convex then plane, obtuse, with an evanescent silky pellicle, then smooth, from white becoming yellowish; stem stuffed, rather clavate, naked; gills emarginate, broad, crowded, from bluish purple becoming rather ochraceous.—*Cooke Illus. t. 748.*

In beech woods.

959. Cortinarius (Dermocybe) anomalus. *Fr. Hym. Eur. 369.*

Anon'alus = uneven, irregular, abnormal.

Pileus fleshy, thin, convex, obtuse, then gibbous, dingy-rufous, hoary and discoloured with evanescent fibrils; stem somewhat stuffed, thin, attenuated, fibrillose, rather scaly, pallid-violaceous; gills crowded, with a decurrent tooth, bluish-purple, then cinnamon.—*Berk. Outl. t. 12, f. 4. Cooke Illus. t. 776.*

In woods.

Gregarious, small. Spores $8-9 \times 7 \mu$.

960. Cortinarius (Dermocybe) spilomeus. *Fr. Hym. Eur.*

Spilom'eus, from *σπίλος* = a speck or stain; from the variegated stem.

Pileus slightly fleshy, gibbous, dry, becoming smooth, brownish, changing colour; stem nearly hollow, thin, white or lilac, variegated with rufous or tawny scales; gills emarginate, crowded, narrow, bluish-lilac, pallid, at length cinnamon.—*Sow. t. 384, f. 1? Fr. Icon. t.*

In woods.

Spores $6 \times 4 \mu$ in Herb. Berk.

961. Cortinarius (Dermocybe) lepidopus. *Cooke Grevillea XVI., 43.*

Lepid'opus, from *λίπος* = a scale, and *πούς* = a foot; from the fibrillose stem.

Pileus fleshy, smooth, even, rather thin, convex, then expanded, gibbous (1-2 in.), umber, with a tinge of violet near the margin, becoming rufescent at the disc, flesh whitish, with a darker line near the gills. Stem (3 in. long) attenuated upwards, becoming

hollow when old, violet at the apex, dirty white below, *with concentric fibrillose darker bands*, flesh with a pale lilac tinge above and dirty white below. Veil whitish, with a tinge of violet. Gills adnate, rather crowded, thin, violet, then cinnamon. Spores ovate, sometimes almost globose, with an apiculus $9 \times 6 \mu$.—*Cooke Illus. t. 850.*

In healthy ground.

Colour of the pileus rather variable in the tint of brown. Allied to *C. anomalus*, but resembling *C. spilomeus* in the banded stem, although less distinct, and of a different colour.

* * * *Gills bright cinnamon, red, or yellow.*

962. Cortinarius (Dermocybe) miltinus. *Fr. Hym. Eur. 369.*

Milti'nus, from $\mu\acute{\upsilon}\lambda\tau\omicron\varsigma$ = red-lead, cinnabar.

Pileus fleshy, thin, convex, bay-cinnamon, soon quite smooth and shining; stem hollow, equally attenuated upwards, *cinnamon, clad with reddish fibrils*; base thickened, white, tomentose; gills adnate, narrow, plane, crowded, ferruginous.—*Cooke Illus. t. 785.*

In mixed woods.

Pileus $1\frac{1}{2}$ in. broad. Stem 2-3 in. long, 2-3 lines thick.

963. Cortinarius (Dermocybe) cinnabarinus. *Fr. Hym. Eur. 370.*

Cinnabari'nus, from *cinnabaris* = dragon's blood, vermilion.

Pileus fleshy, obtuse, silky, then smooth, shining, stem stuffed, short, fibrillose, *vermilion-red*, gills adnate, broad, rather distant, darker.—*Cooke Illus. t. 785 B.*

In beech woods. Oct.

Stem $1\frac{1}{2}$ -2 in. long, 3-4 lin. thick; fibrillose or striate. Pileus 2-3 in. broad, campanulate, then plane, silky, or obsoletely squamulose, vermilion, flesh firm, paler; gills adnate, subdecurrent; 3 lin. broad, connected by veins, edge unequal, darker. Spores $7-8 \times 4 \mu$.

964. Cortinarius (Dermocybe) sanguineus. *Fr. Hym. Eur. 370.*

Sanguin'eus = like blood, *sanguis*.

Pileus fleshy, thin, obtuse, innate, silky, or squamulose; stem stuffed, then hollow, thin, equal, as well as the veil, *dark blood-red*; gills crowded, rather broad, darker.—*Sow. t. 43. Bolt. t. 56. Cooke Illus. t. 786.*

In woods.

Spores $6-7 \times 4 \mu$.

965. Cortinarius (Dermocybe) anthracinus. *Fr. Hym. Eur.* 370.

Anthrac'inus, ἀνθράκινος, made of a carbuncle ; from ἀνθραξ = a live coal.

Pileus with the disc fleshy, otherwise thin, convex then expanded, umbonate, fibrillose, becoming even or smooth, almost of a *chestnut colour* ; stem fistulose, equal, fibrillose, intense blood-red ; gills adnate, crowded, *light red*, becoming blood-red when bruised.—*Cooke Illus. t.* 787a.

In woods.

Stem 2 in. long, 1-2 lines thick. Spores $8 \times 5 \mu$.

966. Cortinarius (Dermocybe) cinnamomeus. *Fr. Hym. Eur.* 370.

Cinnamom'eus = of or like cinnamon (in colour).

Pileus fleshy, thin, obtuse, umbonate, cinnamon-brown, silky with innate yellowish fibrils, or squamulose, at length becoming smooth ; stem stuffed, then hollow, thin, *equal*, as well as the *flesh and veil yellowish* ; gills adnate, broad, crowded, shining.—*Bolt. t.* 156. *Sow. t.* 205. *Cooke Illus. t.* 777, 778.

In woods. Common.

Variable in form. Spores $7-8 \times 5 \mu$.

var. **semisanguineus.** *Fr. Hym. Eur.* 370.

Semisanguin'eus = half blood-red, reddish.

Gills blood-red.—*Cooke Illus. t.* 779.

var. **croceus.** *Fr. Hym. Eur.* 371.

Croc'eus = crocus, or saffron-coloured.

Smaller. Pileus somewhat squamulose ; gills less crowded, becoming yellowish.—*Cooke Illus. t.* 780 A.

967. Cortinarius (Dermocybe) croceo-conus. *Fr. Hym. Eur.* 371.

Croc'eo-co'nus, from *croceus* = saffron, and *conus* = a cone.

Pileus rather fleshy, conic then campanulate, *persistently acute*, becoming smooth, tawny, cinnamon ; stem slender, flexuous ; gills ascending, linear, crowded, cinnamon.—*Cooke Illus. t.* 780 B.

Amongst moss.

968. Cortinarius (Dermocybe) uliginosus. *Berk. Outl. p.* 191.

Uligin'o'sus = living in marshy ground, *uligo*.

Pileus campanulato-conical, then expanded, *bright red brown*, very strongly umbonate, silky, sometimes streaked, *flesh yellow-olive*, then cinnamon ; stem flexuous, paler than the pileus ; gills distant, adnate with a tooth, yellow, then olive, then cinnamon.—*Fr. Hym. Eur. Cooke Illus. t.* 851.

In boggy woods amongst *Sphagnum*.

Figured from original drawing from Rev. M. J. Berkeley. Spores $7 \times 4-5 \mu$.

969. Cortinarius (Dermocybe) orellanus. *Fr. Hym. Eur.* 371.

Orellanus : of unknown signification ; perhaps from *aurum* = gold.

Pileus fleshy, obtusely umbonate, villosa-squamulose or fibrillose, tawny orange, *flesh reddish* ; stem solid, firm, nearly equal, striato-fibrillose, *tawny*, as well as the veil ; gills adfixed, broad, rather distant, at length opaque.—*Cooke Illus. t.* 787 B.

On the ground in woods.

Spores 6-7 × 3-4 μ .

970. Cortinarius (Dermocybe) infucatus. *Fr. Hym. Eur.* 372.

Infucatus = painted, dyed.

Bright yellow. Pileus fleshy, convex, obtuse, silky when dry ; stem solid, *attenuated from the clavate base*, fibrillose, paler, gills adnate, crowded, linear, fulvous, then cinnamon ; flesh white.—*Cooke Illus. t.* 781.

On the ground.

Spores 10 × 5 μ .

*** *Becoming olive, veil dirty, pallid, or dingy.* Pileus not torn
*** *into scales.*

971. Cortinarius (Dermocybe) cotoneus. *Fr. Hym. Eur.* 372.

Cotoneus = cottony, *innato-velutinus*.

Olive. Pileus fleshy, campanulate then expanded, bullate, somewhat repand, *innately velvety* ; stem solid, *girt by the dusky veil*, incrassated at the base, gills rather crowded, olive, then brown-cinnamon.—*Cooke Illus. t.* 749.

Under oaks.

Pileus 3 in. broad. Stem 3 in. long. Spores 10-11 × 8 μ .

972. Cortinarius (Dermocybe) subnotatus. *Pers. Syn.* 296.

Sub-notatus = hardly marked, not distinctive.

Pileus fleshy, thin, campanulate, then flattened, squamulose with *hoary superficial flocci*, soon smooth, olive, then fuscous ; stem spongy, stuffed, conical, elongated, marked with scales or fibrils and the yellowish veil, smooth and shining at the apex ; gills adnate, ventricose, broad, rather distant, yellowish, then olivaceous-cinnamon.—*Fr. Hym. Eur.* 372. *Cooke Illus. t.* 832.

Under beech, &c.

Stem 3-4 in., fragile. Pileus 4 in., gills 3-5 lines broad, connected by veins, rather thick. Spores 8-9 × 5 μ .

973. Cortinarius (Dermocybe) raphanoides. *Fr. Hym. Eur. 373.*

Raphanoides = like a radish, *raphanus*; from its odour.

Olivaceous, then discoloured; pileus fleshy, campanulate, then expanded, gibbous, *silky with innate fibrils*; stem stuffed, firm, fibrillose, *opaque, and veil paler*; gills adnato-ventricose, rather crowded, olivaceous, then cinnamon.—*Cooke Illus. t. 833 A.*

In beech and fir woods.

Pileus 1-2 in. Stem 2-3 in. long. Spores 8-9 \times 5 μ granular.

974. Cortinarius (Dermocybe) valgus. *Fr. Hym. Eur. 373.*

Valgus = bow-legged; from the twisted stem.

Fragile. Pileus convex, somewhat gibbous, even, becoming smooth, olivaceous, then brick red, *margin rather membranaceous*, stem somewhat hollow, elongated, twisted, naked, pallid, shining, *apex striate, sub-violaceous*, bulb rooting, whitish, tomentose, gills affixed, rather distant, dingy yellow, then brick red.—*Cooke Illus. t. 750.*

Amongst moss in woods.

The form (pl. 750) referred to this species, with some doubt, differs from the type in several particulars, and is perhaps a distinct variety.

975. Cortinarius (Dermocybe) venetus. *Fr. Hym. Eur. 374.*

Ven'etus = sea-coloured, bluish.

Pileus fleshy, thin, convex, then expanded, silky or villous, olivaceous, *then yellowish*, opaque; stem stuffed, then hollow, firm, fibrillose-striate, and as well as the veil of the same colour; gills rounded-adnate, somewhat distant, broad, veined, *olive-yellow*, then olivaceous cinnamon.—*Cooke Illus. t. 833 B.*

In woods.

Gregarious; pileus 1½-2 in. broad, obtusely umbonate.

Tribe 5. Telamonia. *Fr. Epier. p. 291.*

Telamonia, from *τελαμών* = a bandage, lint.

Pileus moist, hygrophanous, at first smooth, or sprinkled with the whitish superficial fibrils of the veil. Flesh thin throughout or only abruptly at the margin (not equally attenuated), scissile stem ringed below or peronately scaly from the universal veil, somewhat cotinate at the apex, hence with almost a double veil.

I. PLATYPHYLLI. Gills very broad, rather thick, more or less distant. Stem spongy, or wholly fibrous.

* *Stem and cortina white.*

976. Cortinarius (Telamonia) macropus. *Fr. Hym. Eur. 374.*

Mac'ropus = long-stemmed.

Pileus fleshy, convex then expanded and broken, obtuse, *hoary with minute scales*; stem solid, long, equal, fibrillose, becoming

whitish, ring thin, distant; gills adnexed, distant, very broad, pallid, then watery cinnamon.—*Cooke Illus. t. 788.*

In moist woods.

Spores $7 \times 4 \mu$.

977. Cortinarius (Telamonia) laniger. *Fr. Hym. Eur. 375.*

La'niger = bearing wool, *lana*; woolly.

Pileus compact, hemispherical, expanded, obtuse, *woolly*, with *superficial white scales*, then becoming smooth, golden tawny; stem stout, nearly equal, white, sheathed with a peronate white veil, *distinctly annulate*; gills adnexed (somewhat rounded behind), rather distant, tawny saffron colour, shining.—*Cooke Illus t. 800.*

In larch woods.

Stem 2-4 in. long.

978. Cortinarius (Telamonia) bivelus. *Fr. Hym. Eur. 375.*

Bire'lus = with a double veil, *velum*.

Pileus fleshy, convex, then plane, obtuse, *smooth*, or silky at the margin, brick red, becoming tawny; stem firm, rather bulbous, dirty whitish; *spurious ring fugacious*; gills adnexed, scarcely crowded, bright tawny cinnamon.—*Cooke Illus t. 852.*

In woods. Oct.

Pileus soft, bibulous, moist, but not truly hygrophanous. Taste mild. Spores granular, $10 \times 5-6 \mu$.

979. Cortinarius (Telamonia) bulbosus. *Sow. t. 130.*

Bulbo'sus = bulbous from the stem.

Pileus somewhat fleshy, campanulate, then expanded, *smooth*, *bright brown*; disc fleshy, *subgibbous*; stem stout, bulbous, pallid, or paler than the pileus, veil white, peronate, subannulate; gills adnate, rather distant, opaque, cinnamon.—*Fr. Hym. Eur. 375. Cooke Illus t. 834.*

In woods.

Spores $8 \times 3-4 \mu$.

980. Cortinarius (Telamonia) urbicus. *Fr. Hym. Eur. 375.*

Urb'icus = of or belonging to a city, *urbs*; because it alone among *Cortinarii* grows near human habitations (*Fries, l.c.*).

Pileus fleshy, *convex, plane, smooth, pale clay colour*, or white; stem solid, equal, becoming even, peronate, villous above the narrow white ring; gills emarginate, broad, watery ferruginous.—*Grevillea t. 112, f. 1. Cooke Illus. t. 818.*

In grassy places.

981. Cortinarius (Telamonia) licinipes. *Fr. Hym. Eur.* 376.

Licin'ipes, from *licinium* = lint, and *pes* = the foot or stem.

Fragile. Pileus between fleshy and membranaceous, convex, then expanded, umbonate, smooth, pale red, hygrophanous; stem stuffed, then hollow, subequal, pallid, *clad with floccose white scales*; gills aduate, carried through, pallid, then watery cinnamon.—*Bull t.* 600 *f.* *X. W. T.* *Cooke Illus. t.* 819.

In fir woods.

Stem 4 in. long, 3-4 lines thick, villous at the base. Pileus 2-3 inches and more broad. Spores $10 \times 6-7 \mu$.

982. Cortinarius (Telamonia) microcycclus. *Fr. Hym. Eur.* 376.

Microcycclus, from *μικρός* = small, and *κύκλος* = a circle. From the peculiarity of the veil.

Pileus submembranaceous, convexo-plane, even, smooth, *testaceous brown*, becoming pale, opaque, umbonate, disc darker. Stem stuffed, attenuated upwards from the thickened base, pallid. Veil collapsing in an annular zone. Gills aduate, broad, distant, *lilac*, then cinnamon.—*Cooke Illus. t.* 865.

Under trees.

Stature and habit of *C. decipiens*. Pileus 1 inch broad.

*** Stem and gills violet, cortina commonly white, becoming violet, but universal veil white.*

983. Cortinarius (Telamonia) torvus. *Fr. Hym. Eur.* 376.

Torvus = wild, savage; apparently in contradistinction to *C. urbicus*.

Pileus fleshy, convex, then expanded, obtuse, *pale, red brown, whitish with fibrils or scales*, at length pierced, smooth; stem stout, *sheathed* with the white persistent veil, annulate, *veil violaceous at the apex*; gills thick, distant, very broad, purplish-umber then cinnamon.—*Bull. t.* 600, *f. Q. R. S.* *Cooke Illus. t.* 801.

In woods.

Spores $10-12 \times 7-8 \mu$.

984. Cortinarius (Telamonia) impennis. *Fr. Hym. Eur.* 376.

Impennis = without feathers, smooth.

Pileus *fleshy, convex, obtuse, rigid, becoming smooth*, somewhat testaceous, or brick-red, discoloured; stem solid, short, slightly bulbous, pallid, with the apex and rings or bands of violet, veil white; gills aduate then emarginate, distant, thick, violet, soon purplish, at length watery cinnamon.—*Cooke Illus. t.* 853.

In pine woods.

Stem 2 in. long, $\frac{1}{2}$ in. thick. Spores $10-11 \times 7 \mu$.

985. Cortinarius (Telamonia) plumiger. *Fr. Hym. Eur.* 377.

Plumiger = bearing plumes, feathered.

Pileus fleshy, thin, conic, then campanulate, *gibbous*, sub-olivaceous, then tawny, clad with *dense white flocci, plumose or silky*; stem solid, clavately bulbous, floccose, somewhat annulate, growing pallid; gills adnate, scarcely crowded, broad, violet, then cinnamon, margin entire and of the same colour.

About trunks in moist places.

Densely plumose. Stem 3-4 in. long, 1 inch thick at the base. Pileus 3 in. broad. Spores $10 \times 5.6 \mu$. (M.J.B.)

986. Cortinarius (Telamonia) scutulatus. *Fr. Hym. Eur.* 377.

Scutulatus = chequered, marked with lozenge-shaped figures, *scutulae*.

Pileus fleshy, thin, ovate, expanded, *obtuse*, purplish umber (brick-red), at first whitish silky about the margin, at length *broken up into scales*; stem solid, rigid, elongated, *somewhat bulbous, dark violet externally and internally*, white veil peronate; gills adnate, rather distant, purple.—*Cooke Illus. t.* 820 A.

In moist woods.

Odour of radishes.

987. Cortinarius (Telamonia) evernius. *Fr. Hym. Eur.* 377.

Evernius, from *εὐεργής* = sprouting well, flourishing.

Pileus between fleshy and membranaceous, conico-campanulate, then expanded, smooth, purplish-bay, reddish-white, at length *fibrillose and torn*; stem stout, *cylindrical, soft, violaceous*, scaly from the remains of the white veil; gills adnate, very broad, distant, purplish-violet.—*Cooke Illus. t.* 821, 865.

In woods.

Plate 865 is evidently the typical form, and agrees admirably with Fries's figure in the Swedish Museum. Spores granular, $10 \times 7 \mu$.

988. Cortinarius (Telamonia) quadricolor. *Fr. Hym. Eur.* 378.

Quadricolor = of four colours.

Pileus between fleshy and membranaceous, conical, then flattened, white becoming yellowish (tawny); margin radiately striate, stem *stuffed, then hollow, equal, thin*, elongated, violet, then whitish, banded, gills adnate, broad, distant, serrate, purplish, then cinnamon.—*Cooke Illus. t.* 867.

In beech woods.

Spores $10.11 \times 6.7 \mu$.

* * *Stem and veil red or yellow. Gills tawny or cinnamon, not violet nor becoming brown.*

989. Cortinarius (Telamonia) armillatus. *Fr. Hym. Eur.* 378.

Armillatus = ringed ; said of the stem.

Pileus fleshy, campanulate, then expanded, soon innato-fibrillose and scaly, torn, *bright red brown*, margin thin ; stem solid, elongated, bulbous, fibrillose, rufescent, *circled by red zones* ; gills fixed, very broad, distant, pallid, then dark cinnamon.—*Huss. i., t. 19. Cooke Illus. t. 802.*

In woods.

The stem girt with from 1 to 4 red bands. Spores $10 \times 6 \mu$.

990. Cortinarius (Telamonia) hæmatochelis. *Bull. Champ. t. 527, f. 1.*

Hæmato-chel'is = with a blood-red zone ; $\chi\acute{\epsilon}\chi\upsilon\varsigma$ = the chest.

Pileus fleshy, thin, gibbous, silky-fibrillose, *dingy, or pallid testaceous* ; stem solid, attenuated above, with a *rufous zone below* the middle ; gills adnate, *crowded*, rather narrow, pale cinnamon.—*Hussey, Myc. Illus. Fr. Hym. Eur.* 378. *Cooke Illus. t. 803.*

In woods.

Spores granular, $10 \times 8 \mu$.

991. Cortinarius (Telamonia) limonius. *Fr. Hym. Eur.* 379.

Limon'ius = lemon-coloured.

Pileus fleshy, convexo-plane, *obtuse, smooth*, tawny (ochraceous yellow), at length rivuloso-squamulose ; stem solid, firm, equal ; veil floccoso-squamose, of the same colour ; gills adnate, emarginate, *rather distant, yellow*, then tawny-cinnamon.—*Holms. ii., t. 40. Cooke Illus. t. 804 A.*

In pine woods.

992. Cortinarius (Telamonia) helvolus. *Fr. Hym. Eur.* 379.

Hel volus = pale yellow, yellowish.

Pileus rather fleshy, becoming plane, smooth, hygrophanous, ferruginous, then tawny, at length rimose, with an evanescent obtuse umbo ; stem stuffed, attenuated, of the same colour, *veil peronate, silky, ending in a ferruginous annular zone* ; gills emarginate, thick, rather distant, opaque, tawny-cinnamon.—*Cooke Illus. t. 804 B.*

In woods.

Pileus 2-3 in. Stem 2-3 in. long, 2-4 lin. thick. Spores $6 \times 5 \mu$

993. Cortinarius (Telamonia) hinnuleus. *Fr. Hym. Eur.* 380.

Hinnuleus = a young stag ; fawn-coloured.

Pileus between fleshy and membranaceous, conico-campanulate, then expanded, sub-umbonate, smooth, pallid, tawny-cinnamon, at length pierced ; stem stuffed, rigid, tawny, *attenuated downwards, girt above by the white silky veil* ; gills sub-emarginate, distant, broad, thin, quite entire, tawny-cinnamon.—*Sow. t.* 173. *Cooke Illus. t.* 805.

In woods. Common.

Very variable in size and form, but very common, and always readily distinguished. Spores granular, $10-12 \times 7-8 \mu$.

994. Cortinarius (Telamonia) gentilis. *Fr. Hym. Eur.* 380.

Gentilis = of the same race ; native.

Pileus rather fleshy, conical, then expanded, acutely umbonate, even, smooth, at length cracked ; stem slender, equal, squamose, with tawny-cinnamon (*yellowish*) *scales and oblique ring yellow* ; gills adnate, thick, very distant, quite entire, tawny-cinnamon, of one colour.—*Cooke Illus. t.* 806.

In pine woods.

Pileus $\frac{1}{2}$ -1 inch, rarely more. Stem 2 lines thick. Spores granular, $7-8 \times 6 \mu$.

995. Cortinarius (Telamonia) helvelloides. *Fr. Hym. Eur.* 380.

Helvelloides = like a *Helvella*.

Pileus rather fleshy, thin, sub-convex, obsoletely umbonate, ferruginous, at length rimose. Stem fistulose, *slender, undulate, silky-fibrillose*, as well as the veil yellowish, gills adnate, very distant, *violaceous-umber*, then cinnamon, *edge whitish-floccose*.—*Cooke Illus. t.* 836.

In woods.

Pileus $\frac{1}{2}$ -1 in. broad. Stem 2-5 in. long, 1-2 lines thick, and flexuous. Spores $7 \times 5 \mu$.

996. Cortinarius (Telamonia) rubellus. *Cooke, Grevillea* XVI., 44.

Rubellus = ruddy.

Pileus fleshy, campanulate then expanded, *rufous-orange*, darker at the umbo (2-3 inches broad), disc fleshy, thin towards the margin, flesh reddish ochre. Stem thick, solid, equal, or attenuated upwards (3-4 in. long, $\frac{1}{2}$ in. thick), pale above, darker below, *marked with concentric dark ferruginous fibrillose bands*. Gills adnate, sinuate, rather narrow, scarcely crowded, pale, then bright *ferruginous-red*. Spores pyriform, minutely rough, $8 \times 5 \mu$.—*Cooke Illus. t.* 835.

In swampy places.

** *Stem becoming dusky, veil dusky or dingy, gills dark.*
 **

997. Cortinarius (Telamonia) bovinus. *Fr. Hym. Eur.* 381.

Bovinus = like a bull; thick, big.

Pileus fleshy, convex then plane, even, becoming smooth, watery cinnamon, at length pertuse; stem stout, spongy-bulbous, grey, then dingy cinnamon, *whitish above the dusky zone*. Gills affixed, very broad, rather distant, cinnamon.—*Cooke Illus. t.* 822.

In woods.

Stem 3 in. long, 2 in. thick at the base, 1 in. at the apex. Pileus 4 in. broad. Gills $\frac{1}{2}$ in. broad.

998. Cortinarius (Telamonia) nitrosus. *Cooke, Grevillea XVI., 44.*

Nitrosus = with a nitrous scent.

Stinking. Pileus fleshy, rather thin, obtuse, convex then expanded (2-3 in.), undulate at the margin, fawn-colour or tawny, darker and brownish at the disc, soon breaking up into minute, somewhat *concentric darker* scales. Stem short, stout, solid, ochraceous, darker at base, nearly equal (2-3 in. long, $\frac{1}{2}$ in. thick), paler than the pileus, marked below with *concentric darker squamose bands*. Gills rather broad, somewhat distant, emarginate, violet, then watery cinnamon. Spores elliptical, $12 \times 4 \mu$.—*Cooke Illus. t.* 837.

In mixed woods.

999. Cortinarius (Telamonia) brunneus. *Fr. Hym. Eur.* 381.

Brunneus = brownish.

Pileus campanulate, then flattened, umber (reddish tan-colour when dry), naked, resolved about the margin into innate fibrils, umbo fleshy, obtuse; stem stuffed, elongated, *attenuated upwards*, elastic, dingy, striate with white, veil band-like, dingy white; gills adnate, thick, distant, purplish, then brownish cinnamon.—*Cooke Illus. t.* 854, 868.

In moist places in woods.

Our plate 868 agrees well with the figure by Fries in the Upsal Museum. It can scarcely be confounded with any other species. Spores pip-shaped, granular, $10-12 \times 6$.

1000. Cortinarius (Telamonia) injucundus. *Weinm.* 150.

Injucundus = unpleasant.

Pileus compact, convex, then plane, obtuse, cinnamon, becoming dusky, fibrillose; stem solid, clavate, attenuated upwards, of the same colour, at length becoming tawny yellowish, fibrils and veil dingy; gills emarginate, broad, lilac, then clay-coloured.—*Fr. Hym. Eur.* 381. *Cooke Illus. t.* 823.

In fir woods.

Our figure seems to represent a form of this species, although not precisely the type. Spores $10 \times 5 \mu$.

1001. Cortinarius (Telamonia) glandicolor. *Fr. Hym. Eur.* 382.

Glandi'color = of the colour of an acorn, *glans*.

Of one colour, *umber*; pileus rather fleshy, convex, then flattened, umbonate, becoming dusky hoary when dry; stem rather hollow, *equal, slender, straight*, somewhat fibrillose, veil in the form of a *distant white zone*; gills adnate, broad, distant, entire.—*Cooke Illus. t.* 789.

In pine woods.

Pileus 1-2 in. broad. Stem 3 in., and more, long, 1-3 lines thick.

1002. Cortinarius (Telamonia) punctatus. *Fr. Hym. Eur.* 382.

Punctatus = dotted, or pierced.

Pileus somewhat membranaceous, conical-convex, smooth, hoary, umber, tan-coloured, at length even; stem rather fistulose, equal, slender, undulate, fibrillose-striate, dingy, *yellowish*, girt by a *pallid-brown fugacious veil*; gills adnate, distant, quite entire, brown, then *cinnamon*.—*Cooke Illus. t.* 855.

In beech wood.

Spores in specimens in Herb. Berk. $7 \times 4 \mu$.

II. LEPTOPHYLLI. Gills narrow, thin, more or less crowded. Pileus thin. Stem more rigid externally, somewhat cartilaginous, stuffed or hollow, often attenuated downwards.

* *Stem whitish, pallid, not floccosely scaly.*

1003. Cortinarius (Telamonia) triformis. *Fr. Hym. Eur.* 382.

Triformis = of three shapes or appearances.

var. **Schæfferi.** *Fries. Mon. Hym.* II., 73.

Pileus fleshy, *convex, then plane*, somewhat umbonate, fibrillose or becoming smooth, opaque, tawny, then yellowish, hygrophanous, margin thin; stem stuffed, *clavate*, becoming smooth, pallid, spongy within, ring white, gills somewhat adnate, rather crowded, yellowish honey-colour, at length pale cinnamon.—*Cooke Illus. t.* 790.

In woods.

Pileus 2-3 in. broad. Stem 3 in. long, $\frac{1}{2}$ in. thick. Spores $10 \times 6 \mu$.

1004. Cortinarius (Telamonia) biformis. *Fr. Hym. Eur.* 383.

Biformis = of two shapes or appearances.

Pileus thin, *conic-campanulate, then expanded, smooth, shining*, ferruginous-bay, with a prominent fleshy umbo. Stem stuffed, rigid, *attenuated downwards, fibrillose-striate*, paler, with an oblique

white ring (which is sometimes obsolete). Gills adnate, rather crowded, crenulate, cinnamon.—*Cooke Illus. t.* 869.

In mixed woods.

Pileus $1\frac{1}{2}$ -3 in. diam. Stem 2-4 in. long, 3-4 lines thick. Spores $12 \times 5 \mu$ in Herb. Berk. This is the form without manifest ring mentioned by Fries. It approaches a diminutive form of *C. brunneus*.

*** Stem becoming violet.*

1005. Cortinarius (Telamonia) periscelis. *Weinm.*

Perisc'elis, from *περισκέλις* = a garter ; from the strange ring.

Pileus campanulate, then convex, lilac and silky white, umbo fleshy, elsewhere membranaceous ; stem equal, fibrillose, of the same colour ; somewhat ringed with the interwoven dingy veil ; gills adnate, crowded, narrow, pallid, then obscurely ferruginous.—*Fr. Hym. Eur.* 383. *Cooke Illus. t.* 838.

In bogs or under beech.

Pileus 2 in. broad, hygrophanous. Stem 3-4 in. long. Spores $7-8 \times 4-5 \mu$.

1006. Cortinarius (Telamonia) flexipes. *Fr. Hym. Eur.* 384.

Flex'ipes = with a bent foot, or stem.

Pileus rather fleshy, conical, then expanded, acutely umbonate, violet then tawny cinnamon (yellowish tan-colour when dry), becoming hoary and fibrillose ; stem thin, stuffed, flexuous, rather wavy, fibrillose-squamose, violet at the apex, somewhat ringed with the white veil ; gills adnate, broad, rather distant, violet umber, then cinnamon.—*Cooke Illus. t.* 824 A.

In larch woods.

1007. Cortinarius (Telamonia) flabellus. *Fr. Hym. Eur.* 384.

Flabellus = a little fan.

Pileus rather membranaceous, conical, then expanded, obtusely umbonate, olive brown, becoming pale (tan-coloured), fibrillose ; stem stuffed, then hollow, flexuous, floccosely squamose, pallid ; squamules and ring white ; gills adnate, connected by veins, linear, rather crowded, olive then ferruginous.—*Cooke Illus. t.* 824 B.

In moist places.

Odour strong. Spores $6 \times 4 \mu$.

** * Stem and pileus tawny, ferruginous.*

1008. Cortinarius (Telamonia) psammocephalus. *Bull. Champ. t.* 531, f. 2.

Psammoceph'alus = with the head (*κεφαλή*) like sand (*ψάμμος*).

Tawny cinnamon ; pileus rather fleshy, convex, then expanded, at length umbonate, furfuraceo-squamulose, stem stuffed, attenuated, squamulose, sheathed with the continuous squamulose veil ; gills

adnate, arcuate, crowded.—*Fr. Hym. Eur.* 385. *Cooke Illus. t.* 839 A.

In woods.

Pileus about 1 in. diam. Stem 1 in. long. Spores $6 \times 4\text{--}5\ \mu$.

1009. Cortinarius (Telamonia) iliopodius. *Bull. Champ. t.* 586, *f.* 2, *A. B.*

Iliopod'ius, from ἰλὺς = dirt, and ποὺς = a foot ; from the sordid (dirty) stem.

Pileus rather fleshy, convex, subumbonate, at first with silky-white threads, becoming smooth, light reddish-yellow (*tan-coloured* when dry), at length even and rimose ; stem equal, thin, tawny (without and within), *sheathed with a pallid veil*, naked upwards, fibrillose-striate ; gills adnate, somewhat crowded, thin, inclining to cinnamon.—*Fr. Epicr. p.* 301. *Fr. Hym. Eur.* 385. *Cooke Illus. t.* 839 B.

In woods. July—Nov.

Pileus $1\text{--}2\frac{1}{2}$ in. diam. Stem 1 in. or more long. Spores $7\text{--}8 \times 4\ \mu$.

1010. Cortinarius (Telamonia) incisus. *Fr. Hym. Eur.* 384.

Incis'us = cut into ; as the pileus becomes.

Pileus rather fleshy, between *conical and convex*, at length plane, umbonate, naked, soon *innato-fibrillose or squamose*, hygrophanous ; stem somewhat stuffed, equal, fibrillose with ferruginous fibrils, *veil interwoven into a white ring*, or obsolete ; gills adnate, distinct, scarcely crowded, cinnamon, becoming ferruginous.—*Cooke Illus. t.* 807.

On the ground.

Gregarious. Stem 1 in. high, 1-2 lines thick. Pileus ferruginous tawny, olivaceous brown, or brownish when young.

** *Stem floccosely scaly, and as well as the pileus becoming dusky.*

1011. Cortinarius (Telamonia) hemitrichus. *Fr. Hym. Eur.* 385.

Hemit'richus = half hairy ; *θρίξ* = a hair.

Pileus somewhat fleshy, convexo-plane, umbonate, brown (*tan-coloured*), *margin fringed or silky with dense white superficial fibrils* ; stem hollow, nearly equal, pallid, brown, floccoso-squamose from the white veil, and annulate ; gills adnate, crowded, clay-coloured, then cinnamon.—*Cooke Illus. t.* 825.

In woods.

Pileus 2-3 in. diam. Spores $6\text{--}7 \times 3\text{--}4\ \mu$.

1012. Cortinarius (Telamonia) stemmatus. *Fr. Hym. Eur.* 385.

Stemma'tus = furnished with a wreath, *στέμμα*.

Pileus rather fleshy, convex, then plane, obtuse, *bright bay, hoary and silky about the margin*, when dry becoming paler, fibrillose; stem somewhat fistulose, floccose, squamose, and annulate, ferruginous bay; gills adnate, crowded, bay-brown.—*Cooke Illus. t.* 840 A.

In moist woods.

"The ringless form mentioned by Fries in the text."

1013. Cortinarius (Telamonia) rigidus. *Scop. Carn.* 456.

Rig'idus = firm.

Pileus somewhat membranaceous, conical, then convex, umbonate, *smooth, shining, bay-brown*, stem stuffed, then hollow, thin, equal, flexuous, paler, girt with the squamose white veil; gills adnate, rather crowded, broad, distinct, ferruginous, then cinnamon.—*Fr. Hym. Eur.* 386. *Cooke Illus. t.* 791.

In damp places in woods.

Pileus about an inch across. Strong scented. Flesh as dark as the pileus.

1014. Cortinarius (Telamonia) paleaceus. *Fr. Hym. Eur.* 386.

Palea'ceus = full of chaff, *palea*; scaly.

Pileus rather membranaceous, conical, then expanded, umbonate, *silky with white scales, becoming dusky*; stem hollow, flexuous, girt with whitish scales like rings, which also become tawny; gills adnate, *crowded, whitish*, at length cinnamon.—*Cort. acutus, Grevillea t.* 84, *f.* 1. *Cooke Illus. t.* 826.

In beech woods.

Spores 7.8 × 3 μ .

1015. Cortinarius (Telamonia) Cookei. *Quelet.*

Cooke'i, in honour of the English mycologist, M. C. Cooke.

Small, tawny-yellow, invested with a paler shining woolly veil; pileus conical, umbonate, fibrillose; stem slender, flexuous, stuffed, girt with floccose rings; gills violet, then reddish, at length rust-colour.—*Grevillea t.* 128, *f.* 3. *Cooke Illus. t.* 840 B.

In woods.

Pileus scarce half-inch broad and high. Spores 7 μ long. A curious error in the size of this species occurs in Saccardo's Sylloge.

Tribe 6. *Hydrocybe*. *Fr. Hym. Eur.* 386.

Hydro'cybe, from *ὑδωρ* = water, and *κεφαλή* = the head.

Pileus smooth, or covered with superficial white fibrils, not viscid, but moist when growing, becoming discoloured when dry;

flesh very thin or scissile, rarely with a compacter disc. Stem rather rigid, not peronate; cortina thin, fibrillose, rarely collapsed in an irregular ring.

- I. **FIRMIORES.** Pileus rather fleshy, convex or campanulate-convex, then expanded, obtuse or at length gibbous, *margin at first incurved*. Stem (in most) attenuated upwards.

* *Stem white, cortina of the same colour.*

- 1016. Cortinarius (Hydrocybe) firmus.** *Fr. Hym. Eur.* 386.

Firmus = firm, compact.

Pileus equally fleshy, hemispherical, then expanded, obtuse, becoming smooth, ochraceous, then ferruginous when moist, *flesh compact, white*; stem solid, stout, rather bulbous, fibrillose striate, white, fibrils and cortina becoming ferruginous; gills affixed, thin, ferruginous, then cinnamon.—*Cooke Illus. t.* 792.

In woods.

- 1017. Cortinarius (Hydrocybe) subferrugineus.** *Fr. Hym. Eur.* 387.

Sub-ferrugineus = rather rust-coloured.

Pileus fleshy, convex, then expanded, obtuse or gibbous, becoming smooth, testaceous grey, *becoming ferruginous, rather hygrophanous*; margin thin, stem solid, spongy, rigid externally, stout, somewhat bulbous, whitish, then dingy white, fibrillose veil fugacious; gills emarginate, *scarcely crowded, broad, opaque, pallid*, then becoming ferruginous.—*Cooke Illus. t.* 808.

In woods. Sept.

Odour and taste unpleasant. Spores $8-10 \times 5-6 \mu$.

- 1018. Cortinarius (Hydrocybe) armeniacus.** *Schæff. Icon. t.* 81.

Armeni'acus = of the colour of an apricot, *Armeniacum* (*Prunus Armeniaca*).

Pileus somewhat fleshy, convexo-plane, gibbous, even, smooth, tawny-cinnamon (yellowish tan coloured when dry), *shining*; stem stuffed, *conical, attenuated, rigid*, soft within, as well as the *subperonate veil white*; gills adnate, crowded, pallid, then tawny cinnamon.—*Fr. Hym. Eur.* 387. *Cooke Illus. t.* 793.

In pine woods.

Spores $8-9 \times 5 \mu$.

- 1019. Cortinarius (Hydrocybe) damascenus.** *Fr. Hym. Eur.* 387.

Damasce'nus = of the colour of a damson, Damascene plum.

Pileus fleshy, thin, convex, then plane, obtuse, smooth, *bay-cinnamon* (brick-red and rivulose when dry); stem *solid, firm*,

cylindrical, elastic, and, as well as the fibrillose veil, becoming whitish; gills adnate, thin, crowded, opaque, cinnamon.—*Cooke Illus. t. 856.*

In grassy places.

Taste acid. Stem 3 in. long, $\frac{1}{2}$ in. thick. Pileus 3 in. broad, at length broadly gibbous. Spores $12 \times 6 \mu$.

1020. Cortinarius (Hydrocybe) privignus. *Fr. Hym. Eur. 383.*

Privignus = a step-son; perhaps because, as Fries says (*l.c.*), it has the habit of *C. (Inoloma) malachius*, though belonging to a different tribe.

Pileus fleshy, thin, convex, then plane, gibbous, even, pale tawny, smooth, or with a *fibrillose adpressed hoary silvery bloom*; stem stuffed, then hollow, rather attenuated, silvery, here and there silky with the white veil, gills adnate, somewhat crowded, watery, then opaque cinnamon, edge serrate, white.—*Cooke Illus. t. 827.*

In pine woods.

Pileus 2 in. broad. Stem 3 in. long, 3 lines thick, equal or contorted. Spores $8 \times 5 \mu$.

1021. Cortinarius (Hydrocybe) duracinus. *Fr. Hym. Eur. 388.*

Duracinus = hard-berried, hard; from *durus* + *acinus*. From its general rigidity.

Pileus fleshy, thin, rigid, convex, then plane, gibbous, smooth, watery brick-red (tan-colour, and opaque when dry); stem stuffed, *rigid, unequal, rooting, smooth*, white; cortina thin, adhering in short silky broken threads at the margin; gills adnate, rather crowded, thin, watery cinnamon.—*Cooke Illus. t. 809.*

On the ground in woods.

Spores $5 \times 3 \mu$.

1022. Cortinarius (Hydrocybe) illuminus. *Fr. Hym. Eur. 388.*

Illuminus = without light, dark. In distinction from *C. candellaris*, an extra-British species.

Pileus fleshy, convex, then plane, gibbous, smooth, pale brick-red (reddish tan-colour when dry), circumference thin; stem *somewhat hollow*, attenuated, silky-fibrillose, *pallid, then becoming ferruginous*, gills adnate, little crowded, somewhat distant, pallid, then cinnamon.—*Cooke Illus. t. 841.*

In pine woods.

Stem 3-4 in. long, 3-5 lines thick. Pileus innately virgate under a lens. Spores $11-12 \times 7 \mu$.

1023. Cortinarius (Hydrocybe) tortuosus. *Fr. Hym. Eur. 389.*

Tortuosus = twisted.

Pileus rather fleshy, convex, somewhat gibbous, smooth, even,

shining, ferruginous-bay (brick-red when dry). Stem rather hollow, rigid, equal, *somewhat twisted, silvery*. Gills adnate, crowded, quite entire, *tawny, becoming purple when wounded*.—Cooke *Illus. t.* 857.

In damp pine woods.

Distinctive by becoming purple when bruised. Spores $15-16 \times 8 \mu$.

1024. Cortinarius (Hydrocybe) dilutus. *Pers. Syn.* 300.

Dilu'tus = diluted, weak. From the pileus soon losing colour.

Pileus somewhat fleshy, convexo-plane, sub-umbonate, smooth, even, *opaque*, light yellowish-red; stem stuffed, then hollow, *soft, pallid, thickened at the base*, veil fibrillose; gills emarginate, adnexed, broad, crowded, pallid cinnamon.—*Fr. Hym. Eur.* 389. *Cooke Illus. t.* 810.

In woods.

Pileus about 2 in. broad. Gills 3-4 lines. Spores $8 \times 5 \mu$ ($6 \times 4 \mu$ G.M.).

*** Stem and gills commonly becoming violet.*

1025. Cortinarius (Hydrocybe) saturninus. *Fr. Hym. Eur.* 390.

Saturni'nus = of Saturn, gloomy, dark.

Pileus fleshy, thin, campanulate, then expanded, smooth, moist, dark bay (testaceous when dry), becoming discoloured, *silky at the margin* with the white fibrillose veil; stem stuffed, even, *violet*, incrassated at the base, gills adnexed, thin, crowded, purplish, then watery cinnamon.—*Cooke Illus. t.* 828.

In grassy places.

Pileus 2-3 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ -1 in. thick, gills broad, reaching to $\frac{1}{4}$ lines.

1026. Cortinarius (Hydrocybe) imbutus. *Fr. Hym. Eur.* 390.

Imb'utus = moistened, stained: "caro sordida" (Fries).

Pileus fleshy, convex, obtuse, smooth, gilvous (growing pale when dry), rather fibrillose about the thin margin; stem solid, equal, even, whitish, violet at the apex; gills adnate, *rather distant, broad, greyish violet*, then cinnamon.—*Cooke Illus. t.* 870.

In woods.

Stem 3 in. long. Spores $7-8 \times 4-5 \mu$.

1027. Cortinarius (Hydrocybe) castaneus. *Bull. Champ. t.* 268.

Castan'eus = chestnut.

Pileus somewhat fleshy, firm, campanulate or convex, then expanded or gibbous, even, *chestnut (shining when dry)*; stem cartilaginous, stuffed, then hollow, even, violaceous, or pallid-rufescent;

veil white, fibrillose; gills fixed, ventricose, rather crowded, violet, then ferruginous.—*Fr. Hym. Eur.* 391. *Cooke Illus. t.* 842.

In woods and gardens. Common. Esulent.

Variable in size and form. Stem 1 in. long, 2-3 lines thick. Spores $8 \times 5 \mu$.

1028. Cortinarius (Hydrocybe) bicolor. *Cooke Grevillea* XVI., 45.

Bi'color = of two colours.

Pileus rather fleshy, campanulate, then expanded, broadly, or occasionally rather acutely umbonate (1-2 in. diam.), somewhat fragile, dingy whitish, with an occasional tinge of lilac, even, smooth, silky, shining, flesh thin, colour of the pileus, or paler. Stem equal, or attenuated downwards (about 2 in. long, $\frac{1}{4}$ in. thick), pallid violet, becoming whitish, solid. *Flesh bright purplish-violet at the base*, pallid above. Gills adnate, with a tooth, sub-ventricose, slightly eroded at the edge, rather broad, scarcely crowded, purplish-violet, then cinnamon. Spores elliptical, a little attenuated towards one or both ends, $12-14 \times 6-7 \mu$. Veil fugacious, white.—*Cooke Illus. t.* 871.

On the ground in mixed woods.

To this species evidently belong the specimens figured in "Illustrations," pl. 820, f. B., under the name of *C. quadricolor*, from which species it differs considerably.

* * * *Stem and almost obsolete veil yellow or rufous.*

1029. Cortinarius (Hydrocybe) balaustinus. *Fr. Hym. Eur.* 391.

Balaust'inus, from *βαλάντιον* = the flower of the wild pomegranate. From the coloration.

Pileus fleshy, convex, then plane, obtuse, moist, *virgate with innate fibrils*, smooth, *reddish ferruginous* (tawny, brick-red, and shining when dry); stem solid, conically attenuated, fibrillosely striate, pallid, then becoming without and within tawny-ferruginous; gills adnate, broad behind, rather crowded, *ferruginous-red*.—*Cooke Illus. t.* 794.

In beech woods.

Spores $8 \times 4-5 \mu$.

1030. Cortinarius (Hydrocybe) colus. *Fr. Hym. Eur.* 391.

Col'us = a distaff; then, the thread spun. From the character of the stem.

Pileus rather fleshy, convex, somewhat gibbous, smooth, *brown, becoming reddish* (paler and shining when dry); stem solid, attenuated upwards, rigid, naked, *longitudinally fibrillose-striate*,

fugacious cortina paler ; gills adnate, plane, rather thick, dark cinnamon.—*Cooke Illus. t. 795.*

In pine woods.

Mycelium fiery orange. Stem 4 in. long, 4-5 lines thick at the base, 2 lines at the apex. Pileus 1-2 in. broad, at first campanulate, but soon convex spores.

1031. Cortinarius (Hydrocybe) isabellinus. *Batsch. El. f. 17.*

Isabelli'nus = isabelline, dirty yellow, the colour of long worn and unwashed linen.

Pileus rather fleshy, convex, somewhat umbonate, *honey coloured, smooth* (becoming yellowish and shining when dry) ; stem rather hollow, equal, rigid, striate, naked, becoming yellowish ; gills adnate, firm, rather distant, *yellow*, then clay-coloured cinnamon.—*Fr. Hym. Eur. 392. Cooke Illus. t. 829.*

In pine woods.

1032. Cortinarius (Hydrocybe) renidens. *Fr. Hym. Eur. 392.*

Reni'dens = shining, glittering.

Pileus rather fleshy, convex, then plane, even, smooth, *shining, tawny* (ochraceous) ; stem stuffed, firm, equal, smooth, *yellow as well as the fibrillose veil* ; gills subadnate, crowded, thin, tawny.—*Fr. Icon. t. 162, f. 1. Cooke Illus. t. 782.*

In shady woods.

"With the habit of *C. armeniacus*, but smaller and of a brighter colour, readily distinguished—especially by the yellow veil ; stem firm, stuffed, 1½ to 3 in. long, 3 to 4 lines thick, quite equal, externally rather cartilaginous, but wholly splitting into fibrils ; colour of the pileus yellowish, growing pallid, then fulvous ; veil lax, fibrillose, fugacious, yellow ; pileus slightly fleshy, firm, convex, then plane, obtuse or gibbous, 1 to 2 in. broad, quite smooth, shining, when moist ferruginous, fulvous, when dry ochraceous, usually with the disc becoming pale ; flesh thin, splitting, paler ; gills adnate, but also seceding and free, rather crowded, entire, at first pallid, cinnamon, then fulvous ; spores dark ochre ; odour faint, not at all radish-like."—*Fr. Mon. II., 104.*

Spores 8-10 × 5.

** *Stem becoming dusky, cortina pallid, dingy, or white ; gills dark.*

1033. Cortinarius (Hydrocybe) uraceus. *Fr. Hym. Eur. 393.*

Urac'eus = mouse-coloured ; from *ὕραξ* (*hyrax*). The proper Latin form would be *hyraceus*.

Pileus fleshy, campanulate, convex, rather swollen, even, smooth, umber (clay-coloured) ; stem somewhat hollow, soft, equal, firm, fibrillose, striate, *dusky, then blackish*, naked and *olive-coloured at the apex* ; gills adnate, ventricose, rather distant, bay-brown.—*Cooke Illus. t. 796.*

In pine woods.

Pileus 1-2 in. broad, at first with the margin incurved, flesh dusky. Gills broad, 3-4 lines, but with the edge at first whitish.

1034. Cortinarius (Hydrocybe) jubarinus. *Fr. Hym. Eur. p. 393.*

Jubari'nus, from *jubar* = radiance, brightness.

Pileus rather fleshy, campanulate, then expanded, smooth, *shining tawny cinnamon*; stem stuffed, then hollow, firm, striate with fibrils, becoming tawny, *fugacious veil white*; gills adnate, rather distant, tawny cinnamon.—*Cooke Illus. t. 797.*

In pine woods.

Spores $7.8 \times 4.5 \mu$; $10 \times 5 \mu$ (G. M.).

1035. Cortinarius (Hydrocybe) pateriformis. *Fr. Hym. Eur. 394.*

Pat'eri-formis = of the shape of a libation-saucer or bowl, *patēra*.

Pileus somewhat fleshy, rigid, *plane or depressed, obtuse*, orbicular, dusky chestnut, sprinkled with fugacious white fibrils; stem hollow, equal, straight, fibrillose, white then dusky; gills emarginately adnate, somewhat crowded, brick-red.—*Cooke Illus. t. 858.*

In damp places.

Pileus 1 in. broad. Stem 2.3 in. long, 1.2 lines thick. There is a larger form with the pileus 2 in. broad, and the stem 2.4 lines thick. It is this latter which is figured in the "Illustrations."

1036. Cortinarius (Hydrocybe) unimodus. *Britzelmayr Hym. Sudb. iv., f. 131.*

Uni-m'odus = of one kind; *i.e.*, uniform in colour.

Pileus campanulate, then expanded, rufous brown, smooth, margin straight; stem equal, fibrous, of the same tint; gills distant, brown; spores $10-12 \times 8 \mu$.—*Cooke Illus. t. 859.*

In grassy places.

Pileus 4.5 cm. Stem 8 cm. long, 6.7 mm. thick. The diagnoses by Britzelmayr are so meagre that his species can only be conjectured.

II. TENUIORES. Pileus rather membranaceous, conical, then expanded, umbo acute, or rarely obtuse and evanescent, *margin at first straight*; stem nearly equal, or attenuated at the base.

* *Stem white.*

1037. Cortinarius (Hydrocybe) dolabratus. *Fr. Hym. Eur. 394.*

Dolabra'tus = mattock-shaped. Reference to a pickaxe (*dolabra*) not clear.

Pileus between fleshy and membranaceous, campanulate, then expanded, obtuse, smooth, brick-red (even and tan-colour when dry), silky about the margin; *stem long, stout, cylindrical*, smooth, clear white; gills adnate, *very broad, distinct, distant*, tawny-cinnamon.—*Cooke Illus. t. 811.*

In damp places in pine woods.

Pileus 2-4 inches diam. Stem 4-6 in. long, $\frac{1}{2}$ in. and more thick. Spores $12-14 \times 7-8 \mu$.

1038. Cortinarius (Hydrocybe) rigens. Pers. Syn. 288.

Rigens == stiffening, rigid.

Pileus somewhat fleshy, conical, soon convex, obtuse, even, smooth, opaque, clay-coloured; stem cartilaginous, rigid rooting, smooth, naked, white, somewhat attenuated upwards; gills adnate, sub-decurrent, broad, distant, clay-coloured, then dark cinnamon.—Fr. Hym. Eur. 395. Cooke Illus. t. 812.

In pine woods.

Spores $10 \times 6 \mu$, $6 \times 4 \mu$ (G. M.).

1039. Cortinarius (Hydrocybe) Krombholzii. Fr. Hym. Eur. p. 395.

Krombholzii, in honour of J. V. Krombholz.

Pileus conic-campanulate, then gibbous, even, smooth, disc fleshy, margin thin, veil appendiculate; stem fistulose, equal, naked, whitish; gills nearly free, broad, ferruginous, the edge becoming yellowish.—Cooke Illus. t. 813.

Amongst moss.

Stem 3 in. long, 3 lines thick. Pileus about an inch. Habit that of *Hypholoma*. Often caespitose. Spores $8 \times 4-5 \mu$. G. M.

1040. Cortinarius (Hydrocybe) Reedii. Berk. Outl. p. 194.

Spores $7-8 \times 8$.

Reedii, in honour of Miss F. Reed, sister of Mrs. Hussey.

Pileus conical, then expanded and strongly umbonate, smooth, shining, persistently brown, disc areolate, margin splitting; stem white, solid, fibrilloso-striate, slightly bulbous; veil fibrillose, evanescent; gills broad, ventricose, ascending, attenuated behind, free, white or pallid, then cinnamon.—Fr. Hym. Eur. 395. Huss. ii. t. 45. Cooke Illus. t. 843 A.

Amongst moss and beech mast. May.

Spores $7-8 \times 4$.

1041. Cortinarius (Hydrocybe) leucopus. Bull. Champ. t. 533, f. 2.

Leucopus == with a white foot, or stem.

Pileus rather fleshy, conical, then expanded, at length umbonate, even, smooth, light red, shining; stem stuffed, then hollow, equal, white; gills sub-adnexed, ventricose, crowded, pallid, then cinnamon.—Fr. Hym. Eur. 395. Cooke Illus. t. 843 B.

In woods.

Spores $6 \times 3-4 \mu$.

1042. Cortinarius (Hydrocybe) scandens. *Fr. Hym. Eur.* 396.

Scandens = climbing. In reference to the long thin flexuous stem.

Pileus submembranaceous, conical, then expanded, at first tawny-ferruginous, when moist honey-coloured, when dry alutaceous, umbo fleshy, *margin striate*; stem fistulose, flexuous, smooth, apex thickened, *base attenuated white*; gills adnate, thin, rather distant, tawny cinnamon, edge of the same colour.—*Cooke Illus. t.* 830.

In fir woods. Oct. and Nov.

Stem 3-4 in. long, 2 lines thick. Pileus $\frac{1}{2}$ -1 broad, or more. Spores $10 \times 5 \mu$. ($8 \times 4 \mu$ 8 m.). The species figured in Fries' *Icones* differs in several points from his description.

**** Stem violet or reddish.**

1043. Cortinarius (Hydrocybe) erythrinus. *Fr. Hym. Eur.* 396.

Erythr'inus, from *έρυθρός* = red.

Pileus rather fleshy, conic, then convex or plane, becoming smooth, rufous bay, umbo rather prominent, darker, stem stuffed, then hollow, equal, rather curved, violet above, gills *slightly adnexed*, somewhat distant, ventricose, pallid cinnamon.—*Cooke Illus. t.* 798 A.

In woods.

Stem 2-3 in. long, 2 lines thick. Pileus $1-1\frac{1}{2}$ in. diam., becoming tawny when dry. Spores $10 \times 5.6 \mu$.

1044. Cortinarius (Hydrocybe) decipiens. *Pers. Syn.* 298.

Decip'iens = deceptive. Because it resembles several other species, even of other tribes, in some particulars.

Pileus submembranaceous, conical, smooth, shining, bay-brown (brick-red), at length depressed around the somewhat fleshy, prominent, darker umbo; stem sub-fistulose, equal, slender, covered with a *pallid separable cuticle*, internally rather bright brown; gills adnate, thin, somewhat crowded, ferruginous brown.—*Fr. Hym. Eur.* 396. *Cooke Illus.* 798 B.

In woods. Sept.

Pileus an inch broad, or but little more. Spores $8 \times 5 \mu$.

1045. Cortinarius (Hydrocybe) germanus. *Fr. Hym. Eur.* 397.

Germa'nus = born of the same parents, closely allied.

Pileus almost membranaceous, conical, then expanded, obtusely umbonate, rather silky, *fragile*, even, brownish (clay-coloured); stem somewhat fistulose, thin, equal, smooth, *lilac, then becoming*

pale, gills adnate, rather distant, broad, watery cinnamon.—*Cooke Illus. t.* 844.

In beech woods.

Stem 3 in. long, 1 line thick. Pileus 1 in.

* * * *Stem becoming yellowish, commonly growing pale.*

1046. Cortinarius (Hydrocybe) detonsus. *Fr. Hym. Eur.* 397.

Detonsus = shorn, shaven.

Pileus somewhat membranaceous, conical, then expanded, rather umbonate, smooth, reddish or yellowish (*tan-coloured* and *silky* when dry), stem stuffed, then hollow, attenuated upwards, smooth, *yellowish pallid*; gills adnate, thin, rather distant, yellowish, then testaceous, quite entire.

Amongst moss in woods.

Pileus $1\frac{1}{2}$ -2 in. broad. Spores $8 \times 6 \mu$.

1047. Cortinarius (Hydrocybe) obtusus. *Fr. Hym. Eur.* 397.

Obtus = blunted, obtuse. From the evanescent umbo.

Pileus submembranaceous, conico-campanulate, *striate to the middle*, flesh coloured; stem hollow, soft, ventricose, adpressedly fibrillose, growing pallid; gills adnato-ventricose, rather distant, tawny-cinnamon, edge fringed with white.—*Cooke Illus. t.* 845 A.

In woods. April to Oct.

Strong scented. Spores $9 \times 5 \mu$.

1048. Cortinarius (Hydrocybe) acutus. *Pers. Syn.* 316.

Acutus = sharp, pointed. From the umbo contrasting with that of the previous species.

Pileus membranaceous, conical, *acutely umbonate, striate*, light reddish-brown (*tan-coloured and even* when dry); stem fistulose, equal, slender, flexuose, growing pale, veil fugacious, white; gills adnate, rather crowded, thin, narrow, quite entire, ochraceous.—*Fr. Hym. Eur.* 398. *Cooke Illus. t.* 845 B.

On moist spots in fir woods.

Pileus $\frac{1}{2}$ in. broad, ferruginous bay. Spores $6 \times 4 \mu$.

* * * *Stem becoming dusky.*

1049. Cortinarius (Hydrocybe) Junghuhnii. *Fr. Hym. Eur.* 398.

Junghuhnii, in honour of Francis Junghuhn.

Pileus rather fleshy, thin, conical, then expanded, papillate, clothed with *innate, white, thin fibrils*, persistently rather velvety,

shining cinnamon; stem stuffed, equal, sub-flexuous, pale red-brown, with *shining, closely-pressed, brown fibrils*; gills adnate, thin, ventricose, saffron yellow, then red-brown.—*Cooke Illus.* 846 A.

In woods. Aug.

Pileus about 1 inch. Stem 2-3 in. long, 2 lines thick. Spores $8 \times 6 \mu$.

1050. Cortinarius (Hydrocybe) depressus. *Fr. Hym. Eur.* 398.

Depressus = flattened, depressed; as the pileus ultimately becomes.

Pileus somewhat membranaceous, conical then convex, umbonate, smooth, *striate about the margin and at first silky, stem hollow*, equal, even, rigid, reddish, *dingy* at the base, silky with white; gills adnate, distinct, rather crowded, saffron yellow, becoming yellowish.—*Cooke Illus.* t. 860.

In moist woods.

Odour faint of stale fish, or cucumber. Pileus 2-3 in. Stem short, rigid.

1051. Cortinarius (Hydrocybe) milvinus. *Fr. Hym. Eur.* 399.

Milv'nus, from *milvus* = a kite. The reference seems to be rather to the character of the coloration than to the actual colour.

Pileus membranaceous, conical, expanded, somewhat umbonate, smooth, striate to the broad rather fleshy disc, sub-olivaceous (pale tan-colour), *margin crowned with innate white scales*; stem almost fistulose, equal, curved, tawny, pallid, spotted with the silky white veil; gills adnate rather distant, thin, olivescens, ferruginous, veined at the base.—*Cooke Illus.* t. 846 B.

In woods. Oct.

Stem 2-3 in. long, 2 lines thick. Pileus $\frac{1}{2}$ -1 in. broad, fawn-coloured, becoming olive, strong scented. Spores $8-10 \times 4 \mu$.

1052. Cortinarius (Hydrocybe) fasciatus. *Fr. Hym. Eur.* 399.

Fasciatus = arranged in bundles, *fasciæ*. From the fibrillose stem.

Pileus membranaceous, conical, then expanded, smooth, becoming pale brick-red, silky when dry, *umbo* rather fleshy, *acute, becoming blackish*; stem almost hollow, *splitting in fibrils*, rather undulated, smooth, pallid, then dingy; gills adnate, thin, rather distant, cinnamon.—*Grevillea* t. 114, f. 5. *Cooke Illus.* t. 814.

In pine woods.

Stem 2-3 in. long, 1 line thick. Pileus $\frac{1}{2}$ inch broad, rarely more. Spores $8 \times 5 \mu$ (G. M.).

GEN. 6. **GOMPHIDIUS.** *Fr. Hym. Eur.* 399.

Gomphid'ius, from γόμφος = a large bolt or nail. From the shape.

Hymenophore decurrent into the stem. Gills composed of a *mucilaginous membrane*, scissile, with a continuous acute edge. pruinose with the blackish *fusiform spores*. Veil viscid floccose.

1053. Gomphidius glutinosus. *Schæff. Icon. t.* 36.

Glutino'sus = full of *gluten*, glue ; glutinous.

Pileus obtuse, glutinous, purplish-brown ; gills *whitish*, then *cinereous*, shortly adnexed ; trama none. —*Fr. Hym. Eur.* 399. *Sow. t.* 7. *Cooke Illus. t.* 879.

In fir woods.

Stem internally yellow at the base. Spores $20 \times 6 \mu$. Pileus 2-5 in. broad. Stem 2-3 in. long. Veil viscid.

var. *β. roseus.* *Fr. Hym. Eur.* 399.

Smaller ; base of stem and pileus rose-red. — *Cooke Illus. t.* 880. (Spores $18 \times 7 \mu$. G. M.)

In woods.

1054. Gomphidius viscidus, Linn. *Fr. Hym. Eur.* 400.

Viscidus = sticky, viscid ; from *viscum* = mistletoe.

Pileus fleshy, at length umbonate, viscid, brownish-red ; gills *purplish-umber*, truly branched ; trama descending into the gills. — *Sow. t.* 105. *Cooke Illus. t.* 881.

Under Scotch firs. Aug.—Oct.

Stem rhubarb-colour within. Spores $18-20 \times 6 \mu$. Pileus 2-3 in. diam. Stem 3-4 in. long, $\frac{1}{2}$ in. thick ; but these dimensions are often exceeded. Gills pallid, then greenish, at length purple umber. Esculent.

1055. Gomphidius maculatus. *Scop. Carn. II.,* 448.

Macula'tus = spotted.

Pileus fleshy, convex, viscid, *white*, variegated with black spots when old ; stem *firm, cylindrical*, yellow, short ; gills decurrent, *branched*, thick, *umber*. — *Fr. Hym. Eur.* 400. *Cooke Illus. t.* 882.

In woods.

The form figured in "Illustrations" differs from the type in the longer stem, which is not yellow, but is attenuated and turns blackish at the base. Pileus 2 inches. Stem 3, or more inches long.

1056. Gomphidius gracilis. *Berk. Outl. p. 196, t. 12, f. 7.*

Gracilis = slender.

Pileus fleshy, conic then hemispherical, *vinous-brown*, covered with a smoky gluten, which when dry leaves blackish spots, chiefly at the margin; stem *slender, flexuous*, pallid, whitish-squamulose above, virgate below, base yellow, gills decurrent, furcate, thick, *watery-white, then turning blackish*.—*Fr. Hym. Eur.* 400. *Cooke Illus t.* 883.

In fir woods.

GEN. 7. **PAXILLUS.** *Fr. Hym. Eur. p.* 400.

Paxillus = a small stake, a peg.

Hymenophore continuous with the stem, decurrent. Gills membranaceous, scissile, somewhat branched, and here and there anastomosing behind, *distinct from the hymenophore, and easily parting from it*. Spores dirty whitish, or ferruginous.

Tribe 1. Lepista.

Pileus entire, central, spores dingy.

* *Gills decurrent.*

1057. Paxillus (Lepista) lepista. *Fr. Hym. Eur.* 402.

Lepista = a drinking-vessel, a goblet.

Pileus fleshy, flattened, depressed, dry, silky or smooth, dirty whitish, cracked and scaly about the margin; margin thin, involute, *even, naked*; stem solid, thick, with a *horny cuticle contiguous with the hymenophore* and similar; gills deeply decurrent, rather branched, crowded, dirty white, *then darker*.—*Cooke. Illus. t.* 872

In moist places in woods.

1058. Paxillus (Lepista) extenuatus. *Fr. Hym. Eur.* 402.

Ex-tenuatus = made thin.

Pileus rigid, extended from the fleshy disc, campanulate-convex, then expanded, naked, smooth, moist, tan-coloured, becoming fuscous, margin involute, pubescent, even; stem solid, tough, smooth, *tuberously rooting at the base*, gills deeply decurrent, arcuate, very much crowded, *white, then mouse-colour*.—*Cooke Illus. t.* 874.

Grassy places in fir woods.

Pileus 1-3 in. Stem $1\frac{1}{2}$ -2 in. long, 3-5 lin. thick.

1059. Paxillus (Lepista) panæolus. *Fr. Hym. Eur.* 402.

Panæ'olus, παναίολος, all variegated. Probably in reference to *Panæolus*, one of the sub-genera of *Agaricus*.

Pileus thin, convex, plane, then rather depressed, smooth, moist, whitish, margin involute, thin; stem stuffed, striate, fibrillose, rufescent, incrassated downwards; gills slightly decurrent, crowded, narrow, at length *watery-ferruginous*.—*Cooke Illus. t.* 873 A.

On the ground in pine woods, etc.

"Somewhat gregarious, at first externally and internally wholly dirty white, then becoming yellowish, gills at length watery cinnamon; stem fleshy, stuffed, 1 inch, or little more, long, 3 lines thick, striate fibrillose, thickened below; pileus fleshy, compact, convex, then expanded, and somewhat depressed, even, smooth, spotted when moist, 1 to 2 in. broad; margin thin, involute, villose; gills slightly decurrent, crowded, narrow, rather veined at the base, separated by a horny line from the pileus; spores watery ferruginous."—*Fr. Mon.* ii., p. 117.

var. **spilomæolus.** *Fr. Hym. Eur.* 402.

Spilom'æolus, from σπῖλος, σπῖλωμα, a spot; and αἰόλος = gleaming.

Pileus *spotted*, as with drops, and, as well as the slender stem, white, becoming yellowish. Gills at length watery-ferruginous, horny grey at the base.

In fir woods.

1060. Paxillus (Lepista) orcelloides. *Cke. & Mass. in Grevillea* XVI., 46.

Orcello-ï'des = like (*Agaricus*) *Orcella*.

Pileus at first snow white, becoming stained with livid or greyish blotches, minutely silky, shining, margin thin, involute. Stem tapering towards the base, solid, elastic, silky-fibrillose, livid ochraceous. Gills crowded, readily separating from the horny hymenophore, whitish, then livid, at length dirty yellowish-brown, adnate, decurrent. Spores $8 \times 4 \mu$.—*Cooke Illus. t.* 874 B.

Amongst grass.

1061. Paxillus (Lepista) lividus. *Cooke, Grevillea* XVI., 45.

Liv'idus = of a leaden colour, livid.

Pileus convex, at length slightly depressed at the disc, dingy white, or livid ochraceous, opaque (1-2 inches). Stem attenuated downwards, white (3-4 in. long, $\frac{1}{2}$ in. thick), fibrillose, stuffed, then

hollow. Gills arcuate, decurrent, white, almost crowded. Spores globose, nearly white, flesh nearly white.—*Cooke Illus. t. 861.*

In woods.

1062. Paxillus (*Lepista*) revolutus. *Cooke, Grevillea* XVI., 45.

Re-volu'tus = rolled back, revolute.

Pileus convex, obtuse, pale ochraceous, slightly darker at the disc, margin thin, even, sometimes at first tinged with violet, a little revolute. Stem solid, gradually attenuated downwards, paler than the pileus, often tinted violet at the base. Gills very decurrent, scarcely crowded, pallid, then clay-coloured. Odour mealy.—*Cooke Illus. t. 862.*

In field.

Pileus about an inch and a half. Stem $1\frac{1}{2}$ -2 in. long, about $\frac{1}{2}$ in. thick at the apex, $\frac{1}{4}$ in. at the base.

Tribe 2. Tapinia.

Tapi'nia, from *ταπεινός* = low, short.

Pileus commonly excentric, or resupinate. Spores ferruginous.

1063. Paxillus (*Tapinia*) paradoxus. *Kalch. Fung. Hung. t. 16, f. 1.*

Paradoxus = strange, unexpected.

Pileus fleshy, convex, then plane, dry, tomentose, rufous-umber; stem solid, somewhat rooting, unequal, fibrillose, yellow or reddish; gills decurrent, distant, connected by veins, yellow, then golden yellow, becoming reddish when old.—*Cooke Illus. t. 884.*

On the ground.

Pileus 2-3 in. across. Spores $20-22 \times 7-8 \mu$.

1064. Paxillus (*Tapinia*) involutus. *Batsch, Consp. f. 61.*

In-volu'tus = rolled inwards, involute.

Pileus compact, convexo-plane, then depressed, moist, becoming smooth, margin involute and tomentose; *flesh pallid*; stem fleshy, solid, firm, naked, thickened upwards, paler; gills branched, broad, porous and anastomosing behind, paler, besmeared and spotted.—*Fr. Hym. Eur. Sow. t. 98. Berk. Outl. t. 12, f. 5. Cooke Illus. t. 875.*

On the ground. Common.

1065. Paxillus (*Tapinia*) leptopus. *Fr. Hym. Eur. 403.*

Lep'to-pus = with the stem (*ποῦς*) thin (*λεπτός*).

Pileus fleshy, excentric, gibbous, at length depressed, *torn* into dense villous scales; *flesh yellow*; margin thin, inflexed; stem

solid, very short, attenuated downwards, sub-incurved; gills crowded, narrow, *straight*, white, then yellowish, *simple* behind.—*Cooke Illus. t. 929* = *P. filamentosus*, *Fr. Epic. 317*.

On the ground.

Stem from an inch in length, and $\frac{1}{2}$ in. thick, lateral. Pileus $1\frac{1}{2}$ -3 in. broad, tawny-yellowish. Gills decurrent, at length becoming darker.

1066. Paxillus (Tapinia) atro-tomentosus. *Batsch, Consp. f. 32.*

Tomento'sus = woolly.

Pileus fleshy, convexo-plane, then depressed or infundibuliform, *granulose, rivulose*; margin thin, involute; *flesh white*; stem between spongiose and solid, firm, velvety, *with a dense amber, then blackish tomentum*; gills crowded, straight, branched behind, becoming yellowish.—*Fr. Hym. Eur. 403. Cooke Illus. t. 876.*

On pine stumps.

1067. Paxillus (Tapinia) crassus. *Fr. Hym. Eur. 404.*

Crassus = thick.

Pileus fleshy, oblique, nearly plane, *becoming even, and ferruginous*. Stem stuffed, excentric, very short, ascending. Gills decurrent, broad, *rather distant*, straight, *cinnamon*. Spores ferruginous, $15-18 \times 7-8 \mu$.—*Cooke Illus. t. 877.*

On mound of rifle butts.

This agrees with specimen in Herb. Berk., but it seems to be rather a *Flammula* than a *Paxillus*.

1068. Paxillus (Tapinia) panuoides. *Fr. Hym. Eur. 404.*

Panno-i'des = like *Panus*; *i.e.*, conchate.

Pileus fleshy, dimidiate, conchate, at length smooth, dirty yellow, elongated behind, sessile or stipitate; gills decurrent, crowded, *branched, crisped, yellow*.—*Sow. t. 403. Berk. Outl. t. 12, f. 6. Cooke Illus. t. 878.*

In cellars, on sawdust, etc.

var. **Fagi.** *Berk. & Br. Ann. Nat. Hist. No. 1961.*

Fagi = of the beech.

Gregarious, crisped, pallid upwards, orange beneath; gills crisped, orange.

On beech stump.

Although described as a distinct species, we fail to detect in dried specimens, or in the spores, any specific difference from *P. panuoides*; only the deeper colour of the gills and different habitat being manifest.

GEN. 8. **HYGROPHORUS.** Fr.

Hygroph'orus, from ὑγρός = moist, and φέρω = I bear.

Hymenophore continuous with the stem, and descending into the gills in an unchanged trama. Gills acute at the edge, clothed with a hymenium which is changed into a waxy mass, not membranaceous, and separable from the trama. Spores globose (or subglobose), white.

Tribe 1. *Limacium.* Fr.

Lima'cium, from limax = a slug ; from the sliminess.

Universal veil viscid, with occasionally a floccose partial one, annular or marginal. Stem clad with scales, or often upwards rough with dots. Gills adnate, decurrent.

* *White, or becoming yellowish.*

1069. Hygrophorus (Limacium) chrysodon. Batsch. *Consp. f.* 212.

Chrys'odon, from χρυσός = gold, and ὀδών, ὀδόντος, a tooth.

White ; pileus fleshy, convexo-plane, viscid, margin involute, floccose ; stem stuffed, subequal, squamulose, yellowish floccose above ; gills rather thin, distant, at length crisped.—Fr. *Hym. Eur.* 405. *Cooke Illus. t.* 885.

In woods.

The yellow flocci at the apex of the stem form an incomplete ring. Spores $8 \times 4 \mu$. Pileus 2-3 in. wide. Stem 2-3 in. long, $\frac{1}{2}$ in. thick.

1070. Hygrophorus (Limacium) eburneus. Bull. *Champ. t.* 551, f. 2.

Eburn'eus = of ivory ; ivory-white.

White ; pileus fleshy, convex, then plane, even, smooth, margin entire, soon naked ; stem stuffed, then hollow, unequal, punctate above with granular scales ; gills firm, distant, straight.—Fr. *Hym. Eur.* 406. *Berk. Outl. t.* 15, f. 1. *Price f.* 19. *Cooke Illus. t.* 886.

In woods. Esulent.

Spores $6 \times 5 \mu$.

1071. Hygrophorus (Limacium) cossus. Sow. *Fungi t.* 121.

Cossus, from its smelling like the caterpillar of *Cossus ligniperda*.

Strong scented, white ; pileus fleshy, convex then plane, even, smooth, viscid, inclining to yellowish, margin naked ; stem stuffed, subequal, furfuraceous and punctate above ; gills somewhat decurrent, thin, distant, straight.—Fr. *Hym. Eur.* 406. *Cooke Illus. t.* 887.

In woods.

Odour similar to that of the Goat moth larva (*Cossus*). Pileus $1\frac{1}{2}$ in. broad. Stem 2-3 in. long, 2-5 lines thick. Spores $8 \times 4 \mu$.

1072. *Hygrophorus (Limacium) pulverulentus.* *B. & Br. Ann. Nat. Hist.*, 1667.

Pulverulentus = full of dust, *pulvis*.

Small. Pileus viscid, pulvinate, white; margin involute, tomentose; stem nearly equal, stuffed, or attenuated at the base, powdered with rosy meal; gills thick, decurrent, with an obtuse margin, whitish.—*Cooke Illus. t.* 895 Δ .

Amongst pine leaves.

Pileus $\frac{1}{2}$ in. across. Stem $\frac{3}{4}$ in. high, 1-2 lines thick. Spores globose, 7 μ diam.

1073. *Hygrophorus (Limacium) penarius.* *Fr. Hym. Eur.* 406.

Penarius = of or for provisions, *penus*; edible.

Compact, white, growing pallid. Pileus fleshy, even, smooth, rather dry, opaque; stem solid, firm, unpolished, rough, *fusiformly* rooting at the base; gills decurrent, distant, thick.—*Fr. Sver. Swamp. t.* 48. *Cooke Illus. t.* 895 B.

In mixed woods.

Stem $1\frac{1}{2}$ in. or more long, about $\frac{1}{2}$ in. thick at the apex. Spores 7-8 \times 4-5 μ .

*** Reddish.*

1074. *Hygrophorus (Limacium) erubescens.* *Fr. Hym. Eur.* 407.

Erubescens = becoming red.

Pileus fleshy, gibbous then convexo-plane, smooth or punctate, margin at first naked, white, then rosy red; stem solid, exannulate, unequal, streaked with *red fibrils*, and the apex *punctate with red dots*. Gills distant, *soft, white*, spotted with *red*.—*Fr. Sver. Swamp. t.* 65. *Cooke Illus. t.* 888.

In fir woods.

Pileus 2-4 in. broad. Stem 2-4 in. long. Spores 8 \times 4 μ .

1075. *Hygrophorus (Limacium) pudorinus.* *Fr. Hym. Eur.* 407.

Pudorinus = shame-coloured, *i.e.*, blushing.

Pileus fleshy, convex, then depressed, even, smooth, viscid, *flesh colour*; stem solid, firm, white, *contracted at the apex*, rough with white dots; gills thick, distant, white.—*Cooke Illus. t.* 911.

In fir woods.

Pileus 2 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 8 \times 4 μ .

1076. *Hygrophorus (Limacium) glutinifer.* *Fr. Hym. Eur.* 408.

Glutinifer = bearing gluten, sticky.

Pileus fleshy, convex, then expanded, *with a glutinous pellicle, rufescent, disc rugose-punctate*, stem *stuffed, ventricose upwards*

with a *viscid veil*, of the same colour, apex whitish squamulose, gills arched, decurrent, rather thick, white.—*Cooke Illus. t. 889.*

In woods.

* * * *Tawny or yellow.*

1077. *Hygrophorus (Limacium) arbustivus.* Fr. Hym. Eur. 408.

Arbusti'vus, from *arbustum* = a plantation. From its habitat.

Pileus fleshy, convexo-plane, obtuse, viscid, *innato-virgate*, becoming *tawny*; stem solid, naked, equal, elastic, incurved, smooth, *white, mealy above*; gills adnate, distant, thick, firm, white.—*Cooke Illus. t. 896 A.*

In woods, under birch, etc. Dec.

Spores $10 \times 6 \mu$. Pileus 2 in. broad. Stem $1\frac{1}{2}$ in. long, $\frac{1}{2}$ in. thick.

1078. *Hygrophorus (Limacium) aureus.* Arrh. in Fr. Mon. II., 127.

Aur'eus = golden.

Splendid *golden yellow*. Pileus fleshy, convex, then plane, even, glutinous; stem stuffed, smooth, somewhat *ringed with the glutinous tawny red veil*; gills adnately decurrent, distant, thin, whitish.—*Cooke Illus. t. 896 B.*

In woods.

Stem 2 in. long, 3 lines thick. Pileus 2 in. broad. Spores $8 \times 4 \mu$.

1079. *Hygrophorus (Limacium) discoideus.* Fr. Hym. Eur. 408.

Discoid'eus = discoid, disk-like.

Pileus fleshy, thin, convex or gibbous, then plane or depressed, even, smooth, glutinous, *yellow-grey, becoming pallid*, disc *darker* and rather *ferruginous*; stem stuffed, soft, flocculose, viscid, whitish and punctate above; gills adnate, then decurrent, thin, soft, growing pallid.—*Cooke Illus. t. 912.*

In grassy places.

Solitary or tufted; stem dotted all over with viscid granules. Spores $8 \times \frac{1}{2} \mu$. Pileus 1-2 in. broad. Stem $1\frac{1}{2}$ -2 in. long, 3-5 lines thick.

1080. *Hygrophorus (Limacium) aromaticus.* Berk. Outl. p. 198.

Aromat'icus = aromatic; from its odour of cinnamon.

Very tender; pileus fleshy, smooth, cinnamon, glutinous; stem stuffed, then hollow, reticulated; gills pinkish, decurrent when young.—*Sow. t. 144.*

Smell agreeable, spicy. Not found since the time of Sowerby.

Berkeley is of opinion that it is a *Hygrophorus*, and should find a place here.

*** *Olivaceous umber.*

1081. *Hygrophorus (Limacium) limacinus.* Fr. Hym. Eur. 409.

Limaci'nus = slimy, like a slug, *limax*.

Pileus fleshy, convex, then plane, smooth, glutinous, *umber*, then *fuliginous* or somewhat olive; margin paler; stem solid, firm, ventricose, fibrilloso-striate, *viscid*, *squamulose* above; gills rather thin, white, then cinereous.—*Cooke Illus. t. 897.*

In woods, etc.

Pileus $1\frac{1}{2}$ -2 $\frac{1}{2}$ in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores $12 \times 8 \mu$.

1082. *Hygrophorus (Limacium) olivaceo-albus.* Fr. Hym. Eur. 410.

Olivaceo-albus = whitish-olive.

Pileus fleshy, acorn shaped, then expanded, even, *clothed with evanescent olivaceous gluten*, *umbo brown*; stem solid, equal, at first with a floccose ring, *spotted with dark scales*, *viscid*, even above; gills adnate decurrent, white.—*Cooke Illus. t. 890.*

In woods and woodland pastures.

Pileus 1-2 in. broad. Stem 3 in. long, 3 lines thick. Spores $10 \times 5 \mu$.

1083. *Hygrophorus (Limacium) hypothejus.* Fr. Hym. Eur. 410.

Hypothej'us, from ὑπο = under, and θείων = sulphur; because yellow beneath the olive gluten.

Pileus fleshy, obtuse, thin, *clothed with olive evanescent gluten*, somewhat virgate; stem stuffed, equal, somewhat spotted, *viscid*, even, veil cortinate, fugacious; gills distant, *yellow*.—*Sow. t. 8. Cooke Illus. t. 891.*

In pine woods, on sandy soil.

Pileus 1-2 in. broad. Stem 2-4 in. long, 2-3 lines thick. Spores $10 \times 6 \mu$.

1084. *Hygrophorus (Limacium) cerasinus.* Berk. Outl. 197.

Ceras'inus = of or belonging to a cherry, κέρασος; from its odour.

Pileus fleshy, convex, broadly umbonate, pale *umber*, then grey, *viscid*, *margin minutely tomentose*; stem white, solid, attenuated below, punctato-squamulose above; gills broad, decurrent, white, tinged with pink, sometimes forked, very distant.—*Fr. Hym. Eur. 410. Cooke Illus. t. 898.*

In fir plantations.

With the odour of the cherry laurel. Spores $8 \times 4 \mu$.

*** *Dingy cinereous, or livid.*

1085. Hygrophorus (Limacium) fusco-albus. *Jasch. No. 502.*

Fusco-albus = dusky white.

Pileus fleshy, convex, then plane, even, smooth, viscid, fuscous, then cinereous; stem solid, equal, *whitish floccose at the apex when dry*; gills decurrent, broad, rather thick, snowy white.—*Cooke Illus. t. 899.*

In woods.

Pileus about 2 in. diam. Stem 2-3 in. long, 4-6 lines thick. Spores $15 \times 10 \mu$.

1086. Hygrophorus (Limacium) agathosmus. *Fr. Hym. Eur. 411.*

Agathosmus, from ἀγαθός = good, and ὀσμὴ = scent.

Pileus fleshy, convex, then plano-gibbous, viscid, livid grey, *disc punctate with crowded pellucid whitish dots*; stem solid, firm, dry, fibrillosely striate, *rough above with point-like scales*; gills decurrent, distant, soft, white.—*Cooke Illus. t. 913.*

In fir woods.

Pileus $1\frac{1}{2}$ - $2\frac{1}{2}$ in. broad. Stem 2-3 in. long, 3-5 lines thick. Spores $10 \times 5 \mu$.

1087. Hygrophorus (Limacium) mesotephrus. *B. & Br. Ann. Nat. Hist. XIII, t. 15, f. 2.*

Mes'otephrus = ash-coloured (τεφρός) in the middle (μέσος).

Pileus convex, subhemispherical, hygrophanous, white, with a brown disc, striate, viscid, as well as the slender stuffed stem, which is floccoso-granulated above; gills decurrent, pure white.—*Cooke Illus. t. 914.*

In woods.

Pileus hygrophanous, striate. Stem slender, flexuous, attenuated at the base. Spores $10 \times 5 \mu$.

1088. Hygrophorus (Limacium) livido-albus. *Fr. Hym. Eur. p. 412.*

Livido-albus, from the leaden pileus and white gills.

Pileus fleshy, thin, obtuse, *even, smooth*, viscid, *livid*, of one colour, margin naked; stem stuffed, slender, equal, nearly even; gills decurrent, distant, distinct, white.—*Fl. Dan. t. 1907, f. 2. Cooke Illus. t. 915.*

In woods.

Spores $10 \times 6 \mu$.

Tribe 2. *Camarophyllus*.

Camarophyllus, from *καμαραός* = anything with an arched cover, and *φύλλον* = a leaf. Alluding to the shape of the gills.

Veil none, stem even, smooth or fibrillose, not rough with points. Pileus firm, opaque, moist after rain, not viscid. Gills distant, arcuate.

* *Gills deeply and at length obconically decurrent.*

1089. *Hygrophorus (Camarophyllus) caprinus*. Scop. Carn. II., 438.

Capri'nus = of or belonging to goats. Perhaps from the fibrils resembling goat's hair.

Pileus fleshy, fragile, conical, then flattened, and umbonate; at length depressed, subrepand, moist, streaky, as well as the stem, which is solid, *fibrillose*, *fuliginous*; gills deeply decurrent, *thick*, scarcely distant, white, then glaucous.—*Fr. Hym. Eur.* 412. *Cooke Illus. t.* 916.

In pine woods.

Pileus 2-4 in. broad. Stem 3-4 in. long, $1\frac{1}{2}$ in. thick. Spores $10 \times 8 \mu$.

1090. *Hygrophorus (Camarophyllus) leporinus*. Fr. Hym. Eur. 412.

Lepori'nus, from *lepus* = a hare; probably from its hairiness.

Pileus equally fleshy, convex, gibbous, equal, *fibrilloso-floccose*, opaque; stem stuffed, short, firm, attenuated, *fibrillose*, pallid; gills decurrent, reddish-grey.—*Schæff. t.* 313. *Cooke Illus. t.* 930.

On downs. Sept.

Pileus 1-2 in. broad. Spores $5-6 \mu$ diam.

1091. *Hygrophorus (Camarophyllus) nemoreus*. Lasch. No. 106.

Nemore'us, from *nēmus* = a grove.

Pileus *equally fleshy*, convex, then expanded, gibbous, at length depressed, rather smooth, approaching to orange; stem stuffed, firm, *squamulose*, fibrously *striate*, attenuated at the base; gills decurrent, thick, distant, nearly of the same colour.—*Fr. Hym. Eur.* 413. *Cooke Illus. t.* 931.

In woods.

Spores $6 \times 5 \mu$.

1092. *Hygrophorus (Camarophyllus) pratensis*. Pers. Syn. 304.

Pratensis = growing in fields.

Pileus convexo-plane, then turbinate, smooth, moist, *disc com-*

pact, gibbous, margin thin, commonly tawny; stem stuffed, even, smooth, attenuated downwards; gills deeply decurrent, arcuate, distant, thick.—Fr. Hym. Eur. 413. Grev. t. 91. Sow. t. 141. Bolt. t. 56. Huss. ii., t. 40. Cooke Illus. t. 917.

On downs and short pastures. Esculent.

Pileus 1-2 in. and more broad. Stem $1\frac{1}{2}$ -2 in. long, $\frac{1}{2}$ in. thick. Spores $6 \times 4 \mu$.

var. **pallidus**. B. & Br. Ann. N. H. No. 1356.

Pileus infundibuliform, pallid; margin undulated, deflexed; stem dilated, fibrilloso-striate; gills distant, decurrent, branched. pallid.—Cooke Illus. t. 932 A.

In grassy places.

var. **cinereus**. Fries Hym. Eur. 413.

Ciner'eus = of the colour of ashes, *cinères*.

Cinereous, stem often white, pileus thinner, margin at length striate.—Smith, Journ. Bot., 1873, 336. Cooke Illus. t. 932 B.

In grassy places.

1093. Hygrophorus (Camarophyllus) virgineus. Wulf. in Jacq. Misc. II., t. 15, f. 1.

Virgin'eus = virgin; from its whiteness.

White. Pileus fleshy, convexo-plane, *obtuse*, moist, at length depressed, areolato-rimose, floccose when dry; stem *stuffed, firm, short*, attenuated at the base; gills decurrent, distant, rather thickened.—Fr. Hym. Eur. 413. Grev. t. 166. Sow. t. 32. Price f. 41. Cooke Illus. t. 892.

On downs and short pastures. Common. Esculent.

Very variable in size.

var. **roseipes**, Mass. Cooke Illus. t. 893.

Ros'ei-pes = with the foot rose-coloured.

Stem soon hollow, *rosy towards the base*, within and without, whitish flocculose. Spores pip-shaped or elongated.

In fir woods.

Spores $12 \times 5-6 \mu$.

1094. Hygrophorus (Camarophyllus) niveus. Scop. Carn. II., 430.

Niv'eus = snowy-white.

Tough. White. Pileus *submembranaceous*, campanulato-convex, then *umbilicate*, smooth, striate when moist, viscid; stem fistulose,

thin, equal; gills decurrent, *thin*, arcuate, distant.—*Fr. Hym. Eur.* 414. *Cooke Illus. t.* 900 A.

In mossy pastures. Common.

Thinner and smaller than *H. virgineus*. Spores $7 \times 4 \mu$.

1095. *Hygrophorus (Camarophyllus) russo-coriaceus*. B. & Br.
Ann. N. Hist. No. 332.

Russo-coria ceus = like Russia leather; from the scent.

Sweet scented. Pileus very white, slightly viscid, convex, fleshy; stem slender, smooth, *solid*; gills broad, thick, arched, decurrent, very few and distant.—*Fr. Hym. Eur.* 414. *Saund. & Sm. t.* 28, *f.* 2. *Cooke Illus. t.* 900 B.

In exposed pastures.

With the odour of Russia leather. Spores $8 \times 4.5 \mu$. Small size.

1096. *Hygrophorus (Camarophyllus) ventricosus*. B. & Br.
Ann. Nat. Hist. 1777.

Ventrico'sus, from *venter* = the belly. From the fusiform stem.

White; pileus convex, unequally fleshy, stem solid, *attenuated at the apex and the base*, gills deeply decurrent, narrow.—*Cooke Illus. t.* 901.

Amongst grass.

Pileus 2-3 in. across. Stem $2\frac{1}{2}$ in. high, $\frac{1}{2}$ in. thick in the middle, solid, but at length partially hollow. Gills sometimes forked. Spores $7 \times 4 \mu$.

**** *Gills ventricose, sinuately arcuate or plano-adnate.***

1097. *Hygrophorus (Camarophyllus) fornicatus*. Fr. Hym. Eur.
414.

Fornica'tus = arched, vaulted.

Whitish. Pileus fleshy, thin, campanulate, then expanded, *even, smooth*, viscid, livid white, stem firm, equal, tough, smooth; gills *sinuate, adnaced*, ventricose, distant, white.—*Fries Epicr. p.* 327. *Batt. p.* 46. *t.* 21. *W. G. Smith in Jour. Bot.*, 1873, *p.* 384. *Cooke Illus. t.* 933.

In mossy places.

Pileus obsoletely umbonate, 1 in. broad, when broadly expanded nearly 2 in. broad. Stem 2-3 in. high, 4 lines thick. Spores $5.6 \times 3 \mu$.

1098. *Hygrophorus (Camarophyllus) distans*. Berk. Outl. p.
200, *t.* 13, *f.* 1.

Distans = far apart; said of the gills.

Pileus somewhat fleshy, plane or depressed, viscid, white, with a silky lustre, here and there stained with brown; stem white above, *cinereous below*, and attenuated, not spotted; gills few, *very*

broad behind, adnate, very distant, with a decurrent tooth, pure white at first, then tinged with cinereous, interstices obscurely rugose.—*Fr. Hym. Eur.* 415. *Price f.* 5. *Cooke Illus. t.* 902.

In woods. Rare.

Spores $10 \times 8 \mu$.

1099. Hygrophorus (Camarophyllus) Clarkii. *B. & Br. Ann. N. H. No.* 1358.

Clarkii, in honour of J. A. Clark.

Fragile; pileus convex, sub-umbonate, *livid-cinereous*, viscid; margin even; stem concolorous, hollow; gills broad, distant, thick, adnate, white.—*Fr. Hym. Eur.* 415. *Cooke Illus. t.* 934 A.

In woods. Oct.

Gills in large specimens nearly $\frac{1}{2}$ in. wide. Spores $12 \times 10 \mu$.

1100. Hygrophorus (Camarophyllus) metapodius. *Fr. Hym. Eur.* 415.

Metapodius, from the stem ($\pi\omega\delta\varsigma$) being reversed, *i.e.*, thick above instead of below.

Pileus *compact*, convex, then expanded, obtuse, at first viscid, then silky *squamulose*, becoming *tawny*; stem solid, smooth, attenuated downwards, *cinereous*, turning *reddish within*; gills thick, distant, veined, greyish white; arcuato-decurrent behind.—*Cooke Illus. t.* 918.

In pastures. Oct.

Stem 1-2 in. long, $\frac{1}{2}$ in. and more thick; pileus $1\frac{1}{2}$ -3 in. broad. Spores $8 \times 5 \mu$.

1101. Hygrophorus (Camarophyllus) ovinus. *Bull. Champ. t.* 580.

Ovinus, from *ovis* = a sheep; woolly.

Pileus fleshy, *thin*, conico-convex, then expanded, gibbous, viscid, then *squamulose*, *brown*; stem slightly stuffed, smooth, somewhat shining, thickened at either end; gills arcuato-decurrent, connected by veins, grey, turning reddish, edge thin.—*Fr. Hym. Eur.* 415. *Huss ii.* 50. *Cooke Illus. t.* 934 B.

In pastures.

Pileus 2-in. broad. Stem 2 in. long, 3 lin. thick. Spores $5 \times 3\text{--}4 \mu$.

1102. Hygrophorus (Camarophyllus) subradiatus. *Schum. Fr. Hym. Eur. p.* 416.

Sub-radiatus = somewhat rayed or radiate.

Pileus *rather membranaceous*, *radially striate*, disc rather fleshy, somewhat umbonate, *tawny*; stem *fistulose*, equal, smooth, pallid,

white at the base ; gills adnate, with a long decurrent tooth, ventricose, *thin*, distant, white.—*Cooke Illus. t. 935 A.*

On heathy ground.

Stem 2 in. long, 2 lines thick. Spores $8 \times 5 \mu$.

var. **lacmus**. *Fr. Hym. Eur.* 416.

Lacmus, coined as an adjective from the Persian *lac*, as in *shellac* ; here probably used in allusion to its lilac colour.

Pileus plano-depressed, fragile, unequal, *lilac*, then pallid, disc fibrillose, gills cinereous.—*Fl. Dan. t. 1731, f. 1. Cooke Illus. t. 935 B.*

On heathy ground.

Spores $8 \times 5-6 \mu$.

1103. Hygrophorus (Camarophyllus) irrigatus. *Pers. Syn.* 361.

Irrigatus = wetted.

Pileus rather fleshy, campanulate, then expanded, somewhat umbonate, even ; stem fistulose, equal, *tough*, smooth, *viscid*, livid ; gills with a decurrent tooth, somewhat distant, whitish.—*Fr. Hym. Eur.* 416. *Cooke Illus. t. 919.*

In grassy pastures.

Pileus about 1-2 in. broad. Stem 2-3 in. long, 1-2 lines thick. Spores $10 \times 5 \mu$.

Tribe 3. *Hygrocybe*.

Hygrocybe, from *ὕγρως* = moist, and *κεφαλή* = the head.

Veil none, whole fungus thin, watery, succulent, fragile. Pileus when moist viscid, *shining when dry*, rarely floccosely squamose, stem hollow, soft, without dots, gills soft.

* *Gills decurrent.*

1104. Hygrophorus (Hygrocybe) Colemannianus. *Blox. in Berk. Outl. p. 200.*

Colemannianus, in honour of W. H. Coleman.

Pileus sub-carnose, umbonate, pallid umber, disc darker, even, striate when moist, and slightly viscid, even when dry. Stem nearly equal, *somewhat silky*, whitish ; gills rather broad, of the same colour as the pileus, distant, deeply decurrent, interstices venoso-rugose.—*Fr. Hym. Eur.* 417. *Cooke Illus. t. 903.*

In grassy pastures.

Spores $7 \times 4 \mu$.

1105. *Hygrophorus (Hygrocybe) fæstens.* *Phil. in Grevillea VII.*,
p. 74.

Fæstens = stinking.

Very *fætid* and nauseous. Pileus hemispherical, then convex, umber, dry, then cracked; stem olive yellow, clad with transverse, cracking fibrous scales; gills decurrent, cinereous.—*Cooke Illus. t. 903.*

Amongst grass.

Pileus $\frac{1}{2}$ -1 in. broad. Stem 1-1 $\frac{1}{2}$ in. long, slender. Spores pip-shaped, 4-5 μ .

1106. *Hygrophorus (Hygrocybe) sciophanus.* *Fr. Hym. Eur.* 417.

Scioph'anus = appearing like a shadow ($\sigma\kappa\iota\acute{\alpha}$); delicate in comparison with *H. pratensis*.

Somewhat *testaceous*, pileus rather fleshy, convex, then depressed, obtuse, slightly viscid, *opaque*, *margin striate*; stem hollow, equal, subflexuous, even; gills decurrent, distant, connected by veins.—*Cooke Illus. t. 937 A.*

In mossy places.

"Spores very pale clay-coloured. There were two forms, one with a darker pileus and the flesh dark, the other paler, with the flesh also pale. The former only deposited spores; it is probable therefore that the pale form was not so fully developed." M. J. B.

1107. *Hygrophorus (Hygrocybe) lætus.* *Pers. Syn.* 417.

Lætus = joyful, happy. From its bright colour.

Pileus thin, convexo-plane, nearly even, viscid, somewhat shining, tawny; stem tough, equal, tawny; gills sub-decurrent, thin, distant, paler.—*Fr. Hym. Eur.* 417. *Fr. Icon. t. 167. f. 2. Cooke Illus. t. 938.*

On open pastures.

Pileus about 1 in. broad. Stem 2-3 in. long; 2 lines thick. Spores $7 \times 4.5 \mu$.

1108. *Hygrophorus (Hygrocybe) Houghtoni.* *B. & Br. Ann. N. H. No.* 1360.

Hought'oni, in honour of the Rev. William Houghton.

Pileus convex, bright coloured, at length depressed in the centre, striate, tawny yellow as well as the stem, transversely undulate, very viscid; gills decurrent, thin, grey.—*Cooke Illus. t. 936.*

Amongst grass. Oct.

Pileus 1 $\frac{1}{2}$ -2 in. across; stem 2 in. and more high, $\frac{1}{4}$ in. thick, sometimes tinged above with blue; odour foxy. The gelatinous coat is extremely thick, and at length separates and forms a cup in the centre. We fail to trace any distinct feature which can separate this from *H. lætus*. The spores are the same. Spores $7 \times 4.5 \mu$.

1109. Hygrophorus (Hygrocybe) vitellinus. *Fr. Hym. Eur.* 417.

Vitelli'nus, from *vitellus*=the yolk of an egg. From the colour.

Pileus membranaceous, disc rather fleshy, smooth, viscid, *lemon-yellow, whitish when dry, margin plicate striate*, stem fistulose, fragile, pale yellow, gills decurrent, rather distant, egg-yellow.—*Cooke Illus. t.* 904 A.

In fields, &c.

Spores $6 \times 4 \mu$.

1110. Hygrophorus (Hygrocybe) ceraceus. *Wulf. in Jacq. Coll.* II., *t.* 15, *f.* 2.

Cera'ceus=waxen.

Brittle. Pileus thin, convexo-plane, obtuse, slightly striate, viscid, *wax-coloured*, as well as the fistulose, unequal, shining stem; gills adnate, sub-decurrent, distant, yellow.—*Fr. Hym. Eur.* 417. *Sow. t.* 20. *Cooke Illus. t.* 904 B.

In pastures. Common.

Pileus about 1 in.; stem 1-2 in. long; 2 lines thick. Spores $8 \times 6 \mu$.

1111. Hygrophorus (Hygrocybe) coccineus. *Schæff. Icon. t.* 302.

Coccin'eus=scarlet-coloured.

Fragile. Pileus thin, convex, *obtuse*, viscid, *scarlet, growing pale, smooth*; stem hollow, *compressed*, yellowish, scarlet above; gills adnate, with a decurrent tooth, connected by veins, variously shaded.—*Fr. Hym. Eur.* 418. *Huss. i., t.* 61. *Sow. t.* 381 (*partly*). *Price f.* 57. *Cooke Illus. t.* 920.

In open pastures.

Pileus 1-2 in. or more; stem 2 in. long, 3-4 lines thick. Spores $10.12 \times 6 \mu$.

1112. Hygrophorus (Hygrocybe) miniatus. *Fr. Hym. Eur.* 418.

Minia'tus=coloured red, vermilion.

Fragile. Pileus thin, convex, *then umbilicate, vermilion*, soon dry, *changing colour, opaque*, smooth or squamulose; stem somewhat stuffed, equal, polished, scarlet; gills adnate, distant, yellow, or yellowish vermilion.—*Cooke Illus. t.* 921 A.

In moist places, on heaths, &c. Common.

Pileus scarcely 1 in. diam.; stem 2 in. long, 1 line thick. Spores $10 \times 6 \mu$.

1113. *Hygrophorus (Hygrocybe) turundus.* Fr. Hym. Eur. 418.

Turundus, from *turunda* = lint.

Pileus thin, convex, then umbilicate, very fragile, at length squamulose with grey-brown flocci; margin incurved, crenate; stem stuffed, then fistulose, rigid, equal, tawny, shining; gills decurrent, distant, white, turning yellowish.

In moist places.

var. **mollis.** B. & Br. Ann. Nat. Hist. No. 1279.

Mollis = soft.

Golden yellow; pileus nearly plane, at length slightly depressed, clad with short radiating soft hairs of the same colour; stem equal, stuffed; gills distant, arcuate, decurrent.—*Cooke Illus. t. 921 B.*

On the naked soil.

Pileus $\frac{1}{2}$ – $\frac{3}{4}$ in. across; stem 1–1 $\frac{1}{4}$ in. high, 1–2 lines thick; gills narrow. Spores $8 \times 4 \mu$.

1114. *Hygrophorus (Hygrocybe) mucronellus.* Fr. Hym. Eur. p. 418.

Mucronellus = with a little sharp point (*micro*).

Fragile; pileus submembranaceous, conico-campanulate, acute, smooth, bright-red, becoming pale, stem fistulose, slim, fibrous, somewhat silky, bare, white at the base; gills decurrent, triangular, thick, yellow.—*Cooke Illus. t. 937 B.*

In grass fields.

Small. Stem thin, 2-in. long.

1115. *Hygrophorus (Hygrocybe) micaceus.* B. & Br. Ann. Nat. Hist. No. 1779.

Micaceus = shining like mica.

Pileus hemispherical, at first yellow, then becoming cinereous, rugose, micaceous; stem yellow, then brown below, granulated, solid; gills decurrent, pallid umber.—*Cooke Illus. t. 905 B.*

On clayey soil.

Pileus $\frac{1}{2}$ – $\frac{1}{3}$ in. across; stem $\frac{3}{4}$ in. high, 1 line thick. Mycelium white. Whole plant turns brown when dry. Spores $4 \times 3 \mu$.

1116. *Hygrophorus (Hygrocybe) Wynnii.* B. & Br. Ann. Nat. Hist. No. 1781.

Wynnii, in honour of Mrs. Lloyd Wynne, of Coed Coch.

Lemon yellow, hygrophanous; pileus umbilicate, or rather

infundibuliform, thin, striate; gills narrow, thin, decurrent.—*Gard. Chron.* 1878, p. 476. *Cooke Illus. t.* 905 A.

On chips, &c.

Fœtid when decayed, losing much of its lemon-colour when it parts with its moisture. Spores $7.8 \times 6 \mu$.

**** Gills adnexed, somewhat separating.**

1117. *Hygrophorus (Hygrocybe) puniceus.* Fr. *Hym. Eur.* 419.

Puniceus = purple-coloured.

Fragile; pileus fleshy, thin, *campanulate, obtuse*, repand, even, viscid, blood-scarlet, then becoming pale; stem hollow, thick, ventricose, *striate, white at the base*; gills *adnexed*, thick, distant, yellow.—*Bolt. t.* 67, f. 2. *Cooke Illus. t.* 922.

In meadows.

Pileus 2-4 in. broad. Stem 3 in. long, $\frac{1}{2}$ -1 in. thick. Spores $8 \times 5 \mu$.

1118. *Hygrophorus (Hygrocybe) obrusseus.* Fr. *Hym. Eur.* 419.

Obrusseus, from *obrusa* = the assaying of gold by fire. From the colour.

Fragile, bright golden yellow; pileus fleshy, thin, *conico-convex, obtuse, flexuose*, rather dry; stem hollow, *sub-compressed, smooth, fulvous at the base*, even; gills adnate, ventricose, thick, distant.—*Cooke Illus. t.* 906.

In woods.

Pileus 2-3 in. broad. Stem 3 in. long, $\frac{1}{2}$ in. thick. Spores $10-12 \times 7-8 \mu$.

1119. *Hygrophorus (Hygrocybe) intermedius.* Pass. *Parm.*

Intermedius = intermediate; allied to the adjacent species.

Pileus thin, campanulate, obtuse, then flattened, rather dry, *fibrillosely silky, golden yellow, becoming cinereous*; stem fistulose, *fibrillosely striate*; gills adnate, ventricose, distant, whitish, then yellowish.—*Fr. Hym. Eur.* 419. *Cooke Illus. t.* 907.

On the damp ground.

Spores $8.9 \times 6 \mu$.

1120. *Hygrophorus (Hygrocybe) conicus.* Scop. *Carn. II.*, 443.

Conicus = conical.

Fragile; pileus submembranaceous, *conical, acute*, smooth, somewhat lobed, at length expanded, and rimose; stem hollow, cylin-

drical, *fibroso-striate*; gills attenuated, free, ventricose, thin, rather crowded.—*Fr. Hym. Eur.* 419. *Sow. t.* 381. *Cooke Illus. t.* 908.

In pastures. Common.

Rarely red, commonly yellow, viscid when moist, shining when dry, usually turning black. Spores $10 \times 7 \mu$.

1121. *Hygrophorus (Hygrocybe) calyptræformis.* *Berk. Outl. p.* 202.

Calyptræ-formis = shaped like a hood (*calyptra*).

Pileus thin, acutely conical, lobed below, minutely *innato-fibrillose*, rosy, growing pale; stem white, smooth, slightly striate, hollow; gills rose-coloured, at length pallid, very narrow, acutely attenuated behind.—*Fr. Hym. Eur.* 420. *Trans. Woolh. Cl.* 1861, *t.* 21, *f.* 4-6. *Cooke Illus. t.* 894.

On the borders of woods and open pastures.

Pileus 2 in. broad. Stem 3-4 in. long, $\frac{1}{4}$ - $\frac{1}{2}$ in. thick, fragile.

var. **niveus.** *Cooke Illus. t.* 923.

Niv'eus = snowy, snow white.

Wholly snow white.

In pastures and lawns.

1122. *Hygrophorus (Hygrocybe) chlorophanus.* *Fr. Hym. Eur.* 420.

Chloroph'anus = appearing like the colour $\chi\lambda\omega\rho\acute{o}\varsigma$ = greenish-yellow.

Fragile; pileus submembranaceous, *convex*, *obtuse*, somewhat lobed, striate; stem hollow, equal, *even*, *viscid*; gills *adnexed*, ventricose, thin, rather distant, becoming whitish.—*Cooke Illus. t.* 909.

Amongst grass and moss.

Pileus about an inch. Stem 2-3 in. long, 2-3 lines thick. Spores $8 \times 5 \mu$.

1123. *Hygrophorus (Hygrocybe) psittacinus.* *Schæff. Icon. t.* 301.

Psittaci'nus = parrot-coloured; *i.e.*, red and green.

Pileus thin, campanulate, then expanded, umbonate, somewhat striate, *clothed with green evanescent gluten*, as well as the hollow, tough, even stem; gills adnate, ventricose, thick, distant, greenish.—*Fr. Hym. Eur.* 420. *Grev. t.* 74. *Sow. t.* 82. *Illus. i., t.* 41. *Cooke Illus. t.* 910.

In fields, etc. Common.

Pileus about an inch. Stem 2 in. long, 2-3 lines thick. Spores $10 \times 5 \mu$

1124. Hygrophorus (Hygrocybe) spadiceus. Scop. Carn. II., 443.

Spadiceus = date-brown.

Fragile; pileus thin, conical, acute, repand, *fibrillosely virgate*, covered with an olive-bay gluten; stem hollow, equal, dry, becoming tawny, fibrillose; gills rounded behind, nearly free, distant, lemon-yellow.—Fr. Hym. Eur. 420. Cooke Illus. ined.

In grassy places.

Similar to *H. conicus*, but firmer, and never turning black. Pileus 3 in. broad. Stem 3 in. long, 3-4 lines thick.

1125. Hygrophorus (Hygrocybe) unguinosus. Fr. Hym. Eur. 420.

Unguinousus = oily.

Fragile. Pileus thin, campanulate, then convex, obtuse, even, clothed with dingy gluten, as well as the hollow, unequal, sub-compressed stem; gills adnate, ventricose, plane, thick, white, becoming glaucous.—Cooke Illus. t. 924.

In woods and pastures.

Pileus 2 in. broad. Stem 2 in. long, 3 lines thick. Spores $10 \times 7-8 \mu$.

1126. Hygrophorus (Hygrocybe) nitratus. Pers. Syn. 356.

Nitratus, from *nitrum* = saltpetre. From its scent resembling that of some of the compounds of Nitrogen with Oxygen.

Fragile, strong scented. Pileus thin, campanulate, then expanded, irregular, viscid, soon dry, *rimulose-squamulose*, cinereous tawny; stem nearly hollow, unequal, sub-compressed, even; gills adnate, seceding, broad, distant, somewhat waved, white, then glaucous.—Fr. Hym. Eur. 421. Sow. t. 106. Cooke Illus. t. 925 = *H. murinaceus*. Fr. Epic. 333.

In pastures.

Pileus 2 in. broad. Stem 2.3 in. long, 3-5 lines thick. Spores $7 \times 5 \mu$.

var. **glauco-nitens.** Fr. Hym. Eur. 421.

Glauco-nitens = sea-coloured (*γλαυκός*) and shining.

Gaping. Pileus *fibrillosely-virgate*, dark olive, or sooty, becoming pale; stem equal, shining; gills becoming glaucous.—Batsch. f. 192.

In grassy places.

Spores $8 \times 6 \mu$.

GEN. 9. **LACTARIUS.** *Fr. Epicr. p. 333.*

Lactarius, from *lac* = milk.

Hymenophore continuous with the stem. Gills unequal, between membranaceous and waxy, rigid, containing a milky fluid, edge acute. Spores globose, white, rarely becoming yellowish.

Fleshy fungi, terrestrial and putrescent; pileus depressed, gills adnately decurrent, and often branched.

Tribe 1. *Piperites.*

Stem central, gills unchangeable, naked, neither discoloured nor pruinose; milk at first white, commonly acrid.

* TRICHOLOMOIDEI. *Pileus viscid when moist, margin at first involute, tomentose.*

1127. Lactarius (Piperites) scrobiculatus. *Fr. Hym. Eur. 422.*

Scrobiculatus = marked with a ditch or trench, *scrobis*; from the appearance of the stem.

Pileus fleshy, depressed, *without zones, yellow*, margin involute, villose, stem hollow, thick, *scrobiculate spotted*, gills thin, crowded, whitish, milk white, then sulphury yellow.—*Cooke Illus. t. 971.*

On the ground.

Pileus reaching to 6 or 8 in. broad. Spores 8-9 μ diam.

1128. Lactarius (Piperites) intermedius. *Krombh. t. 58, f. 11-13.*

Intermedius = intermediate; because not distinguished by Fries.

Pileus fleshy, broad, infundibuliform, viscid, smooth, ochraceous yellow, margin involute, tomentose, then smooth; gills broad, lurid, whitish, somewhat decurrent, affixed, entire; stem short, thick, solid, or sometimes hollow, yellowish, covered with spot-like depressions; milk white, then yellowish, rather acrid.

In woods.

Referred by Fries to *Lactarius cilicioides*.

1129. Lactarius (Piperites) torminosus. *Schoeff. Icon. t. 12.*

Torminosus, from *tormina* = the gripes; causing colic.

Pileus fleshy, depressed, *subzonate*, pallid; stem stuffed, soon hollow, equal (rarely spotted), pallid; margin involute, *bearded* with white; gills thin, whitish, milk persistently white, acrid.—*Fr. Hym. Eur. 422. Sow. t. 103. Cooke Illus. t. 972.*

In woods, fields, etc.

Pileus 3 in. and more. Stem 2½-3½ in. long. Spores 9-10 μ diam.

1130. *Lactarius (Piperites) cilicioides*. Fr. Hym. Eur. 423.

Cilicioïdes = like cloth made of goat's hair, κιλίκιον.

Pileus fleshy, soft, depressed, tomentose, not zoned, flesh colour, turning pallid; margin fibrillose or woolly; stem stuffed, even, pruinose, silky, spotless, pallid; gills crowded, branched, pallid, milk whitish.—*Cooke Illus. t. 973*.

In pine woods.

Pileus 2-4 in. broad. Stem 2-3 in. long, 1 in. thick. Spores 8-9 μ diam.

1131. *Lactarius (Piperites) turpis*. Fr. Hym. Eur. 423.

Turpis = base, ugly.

Pileus compact, plane, viscid, olivaceous-umber, zoneless; margin at first yellowish-downy; stem stuffed, short, viscid, attenuated downwards, olivaceous; gills thin, pallid; milk white, acrid.—*Cooke Illus. t. 987*.

In fir woods.

Pileus often 6-8 in. or more. Stem $1\frac{1}{2}$ -3 in. long. Spores 8 μ diam.

var. **plumbeus**. Bull. Champ. t. 282, t. 559, f. 2.

Plumbeus = leaden.

Pileus compact, convex, at length infundibuliform, dry, unpolished, dingy, then blackish brown; stem solid, equal, blunt; gills crowded, white, then yellowish; milk acrid, white, unchangeable.—*Fr. Hym. Eur. 429. Sow. t. 245*.

In woods.

1132. *Lactarius (Piperites) controversus*. Pers. Syn. p. 430.

Controrversus = turned in an opposite direction. From the margin being at first involute, the pileus becoming infundibuliform afterwards.

Pileus compact, rather fragile, umbilicate, infundibuliform, floccose, then smooth, viscid, whitish, usually variegated with blood-red spots; margin at first involute, villous; stem solid, blunt, unequal; gills thin, much crowded, simple, flesh-coloured; milk white, acrid.—*Fr. Hym. Eur. 423. Trans. Woolhope Club, 1868, p. 245, plate. Cooke Illus. t. 1003*.

Under poplars, etc.

Pileus 3-8 in. Stem 2 in. long, 1 in. thick. Spores 6-8 μ diam.

1133. *Lactarius (Piperites) pubescens*. Schrad. Spic. p. 122.

Pubescens = downy; from the tomentose margin.

Pileus fleshy, firm, thin, plano-umbilicate, whitish, without zones, disc glabrous, shining; margin whitish-fibrillose (or tomentose); stem stuffed, then hollow, very short, attenuated downwards; flesh-colour, then white; gills somewhat crowded, narrow, flesh-

coloured ; milk acrid, white.—*Fr. Hym. Eur.* 424. *Cooke Illus. t.* 974.

In pastures.

Pileus 2 in. Stem 1 in. long, $\frac{1}{2}$ in. thick. Spores 7-8 μ diam.

1134. *Lactarius (Piperites) aspideus.* *Fr. Hym. Eur.* 424.

Aspid'eus = like a shield, *aspis*.

Pileus fleshy, *gibbous-convex*, then depressed, viscid, zoneless, straw-coloured, *with a tomentose marginal ring*, which is deciduous, leaving the margin quite smooth ; gills rather thick, pallid ; milk at first white, then *lilac*.—*Cooke Illus. t.* 1083.

In moist places.

Pileus 2-4 in. broad. Stem 2-3 in. long. Spores 9 μ diam.

** LIMACINI. *Pileus viscid when moist, with a pellicle ; margin naked.*

1135. *Lactarius (Piperites) insulsus.* *Fr. Hym. Eur.* 424.

Insulsus = tasteless. Probably from its outward similarity to *L. deliciosus*.

Pileus fleshy, umbilicate, then infundibuliform, viscid, *somewhat zoned, yellowish*, margin naked ; stem *stuffed, then hollow*, firm, pallid ; gills crowded, forked, pallid ; *milk white, acrid*.—*Huss. i., t.* 59. *Berk. Outl. t.* 13, *f.* 2. *Cooke Illus. t.* 975.

In woods and on their borders.

Pileus 3-4 in. broad. Stem $1\frac{1}{2}$ in. long, 1 in. thick. Spores $10 \times 8 \mu$.

1136. *Lactarius (Piperites) zonarius.* *Bull. Champ. t.* 104.

Zona'rius = marked with zones or rings.

Pileus *compact*, umbilicate, even, viscid, with *yellowish zones* ; margin involute, naked ; *stem solid*, short, elastic, even, yellowish ; gills crowded, thin, whitish ; milk white, acrid, unchangeable.—*Fr. Hym. Eur.* 425.

On the borders of woods.

Pileus 2-4 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ -1 in. thick.

1137. *Lactarius (Piperites) utilis.* *Weinm. Ross.* 43.

Utilis = useful. Highly esteemed in Russia (*Fries, l.c.*).

Pileus convexo-plane, at length funnel shaped, even, smooth, tan colour ; stem hollow, even, of the same colour ; gills adnate, crowded, pallid ; milk white, mild, then slightly acrid.—*Fr. Hym. Eur.* 425. *Cooke Illus. t.* 1084.

On the ground.

Pileus 5-8 in. broad. Stem 2-3 in. long, 1 in. thick.

In the specimen found for the first time in Britain the pileus was pale, and rather a dirty ochre, the stem darker, and longitudinally striate, but otherwise in accord with the description.

1138. *Lactarius (Piperites) blennius*. Fr. Hym. Eur. 425.

Blennius = slimy ; from βλενός = mucus.

Pileus fleshy, depressed, *glutinous*, often concentrically guttate, *greenish-grey* ; *margin at the first bent inwards, slightly pubescent* ; stem stuffed, then hollow, viscid, of the same colour ; gills crowded, white, as well as the acrid milk.—*Cooke Illus. t. 988.*

In woods.

Pileus 2-4 in. broad. Stem $1\frac{1}{2}$ -2 in. long, $\frac{1}{2}$ - $\frac{3}{4}$ in. thick. Spores $8 \times 6 \mu$.

1139. *Lactarius (Piperites) hysginus*. Fr. Hym. Eur. 426.

Hysginus, from ὑσγίνον = a crimson dye.

Pileus fleshy, rigid, umbilicate, even, viscid, *fleshy-red*, growing pale ; *margin thin, inflexed* ; stem stuffed, then hollow, smooth, rather spotted ; gills crowded, white, as well as the acrid milk.—*Cooke Illus. t. 989.*

In woods.

Pileus $2\frac{1}{2}$ -4 in. broad. Stem 2-4 in. long, $\frac{3}{4}$ in. thick. Spores $8-10 \mu$ diam.

1140. *Lactarius (Piperites) trivialis*. Fr. Hym. Eur. 426.

Trivialis = common.

Pileus fleshy, depressed, viscid, *zoneless, lurid*, becoming pale, *cuticle inflexed at the margin* ; *stem hollow*, stout ; gills thin, crowded, white, as well as the acrid milk.—*Cooke Illus. t. 976.*

In pine woods.

Pileus 4-7 in. broad. Stem 1-6 in. long, 1 in. thick. Spores 10μ diam.

1141. *Lactarius (Piperites) circellatus*. Battara t. 13, f. D.

Circellatus = marked with little circles, ringed.

Pileus fleshy, convex, then plane, repand, viscid, zoned with ferruginous, *disc at the first umbilicate*, darker ; *stem solid*, firm, attenuated downwards ; gills *crowded*, whitish ; milk white, acrid.—*Fr. Hym. Eur. 426. Sow. t. 203. Cooke Illus. t. 990.*

In woods.

Pileus 2-3 in. broad. Stem $1\frac{1}{2}$ -2 in. long, $\frac{1}{2}$ in. thick. Spores $8-9 \mu$ diam.

1142. *Lactarius (Piperites) uvidus*. Fr. Hym. Eur. 426.

Uvidus = moist, viscid. But more probably from its milk being coloured like a grape, *uva*.

Pileus fleshy, *thin*, convex, then depressed, *zoneless*, viscid, dingy ; *margin at first involute*, naked ; stem soon hollow, viscid, pallid ; gills thin, crowded, white, when wounded becoming lilac ; milk white, *then lilac*.—*Cooke Illus. t. 991.*

In woods.

Pileus 2-4 in. broad. Stem $1\frac{1}{2}$ - $3\frac{1}{2}$ in. long, $\frac{1}{2}$ - $\frac{3}{4}$ in. thick. Spores $10-12 \mu$ diam.

* * PIPERATI. *Pileus without pellicle, hence absolutely dry, often unpolished.*

1143. Lactarius (Piperites) flexuosus. *Fr. Hym. Eur. p. 427.*

Flexuosus = full of bends.

Pileus compact, convex, then fractured and repand, *dry*, smooth, at length cracking into scales, opaque, lurid, becoming pale; stem solid, stout, unequal; *gills thick, distant, yellowish*; milk acrid, white.—*Cooke Illus. t. 992.*

In woods.

Pileus 2-4 in. broad. Stem 2-3½ in. long, ¾-1 in. thick. Spores 8 μ diam.

1144. Lactarius (Piperites) pyrogalus. *Bull Champ. t. 529, f. 1.*

Pyrogalus, from πῦρ = fire, and γάλα = milk.

Pileus fleshy, plane, then depressed, subzonate, smooth, even, rather moist, livid, cinereous; stem stuffed, then *hollow*, pallid, attenuated downwards; gills *thin*, rather distant, yellowish; milk *very acrid*, copious, white.—*Fr. Hym. Eur. 427. Cooke Illus. t. 993.*

In woods and meadows.

Pileus 2-3 in. broad. Stem 1½ in long, 3-5 lin. thick. Spores 7-10 μ diam.

1145. Lactarius (Piperites) squalidus. *Kromb. t. 4, f. 23-25.*

Squalidus = dirty.

Pileus compact, convexo-plane, umbilicate, dry, smooth, without zones, pallid, lurid; stem solid, equal, smooth, pallid brown; gills adnate, *narrow, becoming yellowish*; milk whitish, *mild*.—*Fr. Hym. Eur. 428. Cooke Illus. t. 1004 A.*

In moist places.

Spores 6-10 μ diam.

1146. Lactarius (Piperites) capsicum. *Schulz, Kalch, Icon. Hung. t. 26, f. 1.*

Capsicum = red pepper.

Pileus compact, pulvinate, dry, chestnut colour, margin narrowly involute; stem solid, firm, whitish, *striate with brownish or reddish fibrils*, gills adnate-decurrent, rather crowded, tawny, approaching to orange; milk white, acrid.—*Fr. Hym. Eur. 428. Cooke Illus. t. 977.*

On the ground.

Spores 6 μ diam.

1147. *Lactarius (Piperites) chrysorrhæus.* Fr. Hym. Eur. 428.

Chrysorrhæus, from χρύσος = gold, and ρέω = I flow. From the milk.

Pileus rather fleshy, umbilicate, then infundibuliform, yellowish flesh-coloured, marked with darker zones or spots; stem stuffed, then hollow, equal, even, white; gills decurrent, thin, crowded, yellowish; milk white, then golden yellow, very acrid.—*Price f. 71. Bolt. t. 144. Cooke Illus. t. 984.*

In woods.

Pileus 2-3 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 6 μ diam.

1148. *Lactarius (Piperites) acris.* Bolton Fungi, t. 60.

Acris = sharp, sour.

Pileus fleshy, irregular, at length infundibuliform, viscid, dusky cinereous; stem stuffed, then hollow, somewhat excentric, pallid, attenuated downwards; gills rather crowded, pallid, yellow, turning red; milk acrid, white, then reddish.—*Fr. Hym. Eur. 428. Cooke Illus. t. 1005.*

In woods.

Pileus 3 in. broad. Stem $1\frac{1}{2}$ -2 in. long, $\frac{1}{2}$ in. thick. Spores 6 μ diam. Strong scented.

1149. *Lactarius (Piperites) umbrinus.* Pers. Syn. 435.

Umbrinus = umber-brown.

Pileus compact, convexo-plane, umbilicate, dry, rivulose floccose, umber, zoneless; stem solid, very short, white, turning greyish; gills crowded, pallid yellowish; milk acrid, white, causing grey spots.—*Fr. Hym. Eur. 429. Cooke Illus. t. 1006.*

In pine woods.

Pileus 3 in. broad. Short and compact. Stem scarcely 1 in. long. Spores 8 μ diam.

1150. *Lactarius (Piperites) pergamenus.* Fr. Hym. Eur. 430.

Pergame'nus, from *pergamēna* = parchment.

White. Pileus fleshy, tough, convex, then a little depressed, repand, without zones, rugulose, smooth; stem stuffed, smooth, becoming discoloured; gills adnate, very narrow, horizontal, much crowded, branched, white, then straw-coloured; milk acrid, white.—*Cooke Illus. t. 978.*

In woods.

Spores 7 \times 5-6 μ . Stem 3 in. long.

1151. *Lactarius (Piperites) piperatus.* Scop. Carn. 449.

Pipera'tus = peppery, hot to the taste.

White. Pileus compact, umbilicate, then infundibuliform, rather regular, not zoned, even, smooth; stem solid, thick, very

short, white; *gills decurrent*, arcuate, crowded, narrow, dichotomous, white; milk copious, acrid, white.—*Fr. Hym. Eur.* 430. *Cooke Illus. t.* 979.

In woods.

Pileus 4-9 in. broad. Stem 1-2 in. long, 1-2 in. thick. Spores 8 μ diam.

1152. *Lactarius (Piperites) vellereus.* *Fr. Hym. Eur.* 430.

Vellereus, from *vellera* = fleeces. Woolly.

White. Pileus compact, umbilicate or convex, *tomentose*, zoneless; margin reflexed; stem solid, blunt, pubescent; *gills distant*, arcuate, whitish; milk scanty, acrid, white.—*Sow. t.* 204. *Cooke Illus. t.* 980.

In woods.

Spores 8 μ diam. Pileus 5-7 in. broad. Stem 2-3 in. long, 1-1½ in. thick.

1153. *Lactarius (Piperites) exsuccus.* *Otto.*

Exsuccus = without juice.

Pileus clothed with adpressed down, fleshy, depressed, with an involute margin; gills decurrent, white, *shaded with verdigris*, connected by veins and forked; stem white, very short, clothed with adpressed down; whole plant rigid and brittle, *milkless*.—*Lact. vellereus* var. β . *exsuccus.* *Fries, Sys. Myc. i., p.* 77. *Cooke Illus. t.* 981.

In pine woods, etc.

Smaller than *L. vellereus*. Spores 8-9 μ diam.

1154. *Lactarius (Piperites) scoticus.* *B. & Br. Ann. Nat. Hist., No.* 1783.

Scoticus = Scotch; described from specimens found in Scotland.

Pileus depressedly tomentose, then becoming smooth, the involute margin tomentose; flesh firm; wholly whitish. Stem somewhat unequal, smooth, approaching flesh colour; gills thin, scarcely branched. Milk persistently white, acrid.—*Cooke Illus. t.* 1004 B.

Amongst moss.

Odour pungent. Spores 7-8 μ diam. Pileus 1-2 in. broad.

Tribe 2. Dapetes.

Stem central. Gills naked, milk from the first deeply coloured.

1155. *Lactarius (Dapetes) deliciosus.* *Linn. Suec.* 1211.

Deliciosus = delicious.

Pileus fleshy, umbilicate, viscid, *zoned*, smooth, rufous-orange, growing pale; margin smooth; stem stuffed, then hollow, rather

spotted; gills and milk at first *saffron-red*, then greenish.—*Fr. Hym. Eur.* 431. *Sow. t.* 202. *Huss. i. t.* 67. *Hogg & Johnst. t.* 5. *Trans. Woolh. Cl.* 1867, *t.* 11. *Badh. i., t.* 6, *f.* 2-ii. *t.* 5, *f.* 4. *Cooke Illus. t.* 982.

In fir woods. Esculent.

Pileus 2-6 in. broad. Stem 1-2 in. long, scarce 1 in. thick. Spores 10-11 \times 8 μ .

Tribe 3. *Russulares.*

Stem central, gills pallid, then discoloured, becoming darker, changing when turned to the light, at length pruinose, with white milk, at first white, mild, or from mild becoming acrid.

* *Pileus at first viscid.*

1156. *Lactarius (Russulares) pallidus.* *Pers. Syn.* 431.

Pall'idus = pale.

Pileus fleshy, obtuse, depressed, smooth, viscid, *zoneless*, pallid; stem stuffed, then *hollow*, pruinose, pallid tan; gills subdecurrent, crowded, pallid, pruinose; milk mild, white.—*Fr. Hym. Eur.* 431. *Saund. & Sm. t.* 16. *Cooke Illus. t.* 1007.

In woods.

Pileus 3-6 in. broad. Stem 2 in. long and more, $\frac{3}{4}$ in. thick. Spores 7-11 μ diam.

1157. *Lactarius (Russulares) quietus.* *Fr. Hym. Eur.* 431.

Quietus = at rest, mild.

Pileus fleshy, depressed, obtuse, viscid at first, *sub-cinnamon*, soon dry, growing pale, *rather silky, somewhat zoned*, opaque; stem stuffed, smooth, rust coloured; gills white, then reddish; milk mild, white. *Cooke Illus. t.* 983.

In woods.

Pileus 3 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 10-12 μ diam.

1158. *Lactarius (Russulares) aurantiacus.* *Fl. Dan. t.* 1909.

Auranti'acus = orange-coloured.

Pileus fleshy, plane, then depressed, even (1-2 in. diam.), without zones, *orange*; stem stuffed (3 in. long, $\frac{1}{2}$ in. thick), smooth, same colour as the pileus; *gills decurrent*, crowded, from yellowish to ochraceous; milk white, slowly acrid; flesh pallid.—*Cooke Illus. t.* 1099.

On the ground.

Resembling *L. mitissimus* in colour, but rather brighter and more orange, besides being acrid.

Pileus 1-2 in. broad. Stem 3 in. long, $\frac{1}{2}$ in. thick.

1159. *Lactarius (Russulares) theiogalus*. Bull. Champ. t. 567, f. 2.

Theiogalus, from *θεῖον* = sulphur, and *γάλα* = milk.

Pileus fleshy, convex, then depressed, viscid, smooth, reddish-tawny; stem stuffed, even, of the same colour; gills thin, crowded, reddish-yellow; milk white, then sulphur-coloured, at length acrid. —Fr. Hym. Eur. 432. Bolt. t. 9. Cooke Illus. t.

In woods.

Pileus $1\frac{1}{2}$ - $2\frac{1}{2}$ in. broad. Stem 1-2 in. long, 2-4 lines thick.

1160. *Lactarius (Russulares) cremor*. Fries Hym. Eur. 432.

Cremor = thick juice.

Pileus fleshy, thin, convex, then plane, minutely punctulate, viscid, tawny, margin striate; stem hollow, fragile, of the same colour; gills adnate, rather distant, pallid; milk mild, watery white.

In woods.

Stem 2 in. long, 3-4 lines thick. Spores globose, rough, 10 μ . Pileus $1\frac{1}{2}$ -2 in. broad.

var. **pauper**. Karsten, *Symb.* x., 58.

Pileus fleshy, soft, nearly plane, smooth, zoneless, yellowish flesh-colour, or gilvous tan, when dry ochraceous, margin membranaceous, at length pectinately sulcate; stem hollow, equal, naked, smooth, paler than the pileus; gills adnate, rather distant, thin, soft, colour of the pileus; flesh without juice, slowly acrid, white —Cooke Illus. t. 1008.

Under larch, &c.

Spores 10 μ diam. Pileus to 3 in. diam.

1161. *Lactarius (Russulares) vietus*. Fr. Hym. Eur. 432.

Vietus = shrivelled, withered.

Pileus fleshy, thin, at first subumbonate, viscid, then flattened, umbilicate, even, zoneless, silky when dry, growing pale; stem stuffed, then hollow, fragile, livid; gills rather decurrent, thin, whitish; milk whitish, then grey, slowly acrid. —Cooke Illus. t. 1009.

On the ground in woods.

Spores 7-8 μ diam. Pileus $1\frac{1}{2}$ - $2\frac{1}{2}$ in. broad. Stem 2-3 lines thick.

1162. *Lactarius (Russulares) cyathula*. Fr. Hym. Eur. 433.

Cyathula = a little cup.

Pileus fleshy, convexo-plane, umbonate, at length depressed, zoned, viscid, flesh-coloured, when dry rivulose, pallid, opaque; stem stuffed, equal, pallid; gills linear, narrow, crowded, white,

then yellowish flesh-colour; milk acrid, white, unchangeable.—*Cooke Illus. t.* 1085.

In woods.

Pileus 1-2 in. broad. Stem 2 in. long, 1.5 lines thick. Spores 6-10 μ diam.

** *Pileus unpolished, squamulose, villose, or pruinose.*

1163. *Lactarius (Russulares) rufus.* *Scop. Carn. II.*, 451.

Rufus = red.

Pileus fleshy, *umbonate*, at length infundibuliform, dry, flocculose, then *becoming smooth, shining, zoneless, dark-rufous*; stem stuffed, rufescent; gills crowded, rather decurrent, ochraceous, then rufous, milk white, very acrid.—*Fr. Hym. Eur.* 433. *Huss. i.*, t. 15. *Cooke Illus. t.* 985.

In fir woods.

Pileus 3.4 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 9 \times 7 μ .

1164. *Lactarius (Russulares) helvus.* *Fr. Hym. Eur.* 433.

Helvus = light bay, almost yellow.

Pileus fleshy, fragile, convex, then plane or depressed, subumbonate, dry, silky, then floccoso-squamose and cracked, pale brick red, growing pallid; stem stuffed, then hollow, *pruinose or pubescent*; gills decurrent, thin, crowded, whitish, then ochraceous; milk sparse, rather acrid, white.—*Cooke Illus. t.* 994.

On swampy ground.

Pileus 2-4 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 10-12 μ diam.

1165. *Lactarius (Russulares) tomentosus.* *Otto, in Krombh. t.* 40, f. 17, 18.

Tomento'sus, from *tomentum* = stuffing for cushions.

Pileus fleshy, at first umbonate, then depressed and infundibuliform, dingy flesh colour, or becoming rufescent and brownish, finely tomentose; gills rather decurrent, yellow flesh-colour; stem erect, at first stuffed, becoming hollow, pallid, naked, smooth; substance compact; milk whitish, mild.—*Krombh. Schwämme vi.*, p. 7. *Cooke Illus. t.* 1010.

On the ground.

Pileus about 3 in. Stem 2 in. long, $\frac{1}{2}$ in. thick. Spores 8-9 μ diam.

1166. *Lactarius (Russulares) mammosus.* *Fr. Hym. Eur.* 434.

Mammo'sus = with large breasts.

Pileus fleshy, *acutely umbonate*, then depressed, dry, zoneless, *lurid*, clad with an intricate grey down; stem stuffed, then hollow,

pubescent, pallid; gills adnate, crowded, whitish, then pale ferruginous; milk white, slowly acrid.

In pine woods.

var. **monstrosus**. *Cooke Illus. t. 995.*

Larger than in the type, as represented by Fries in his "Icones," tab. 170, fig. 2, as "monstrat *L. mammosum*."

On the ground.

The type form is not yet recorded as British.

Pileus 3 in. Stem 3 in. long, $\frac{1}{2}$ in. thick. Spores 10 μ diam.

1167. *Lactarius (Russulares) glyciosmus*. Fr. Hym. Eur. 434.

Glyciosmus, from γλύκνς = sweet, and ὀσμή = scent.

Strong scented. Pileus fleshy, thin, convexo-plane, somewhat umbonate, dry, squamulose, lurid, opaque; stem stuffed, thin, pubescent, pallid; gills crowded, yellowish-ochre; milk acrid, white.—*Cooke Illus. t. 1011.*

In fir woods.

Pileus 1-2 in. broad. Stem 1-2 in. long, 2-4 lines thick. Spores 6-10 μ diam.

1168. *Lactarius (Russulares) fuliginosus*. Fr. Hym. Eur. 434.

Fuliginosus = sooty, black.

Pileus fleshy, soft, depressed, obtuse, *very dry*, zoneless, at first clouded with a dingy bloom, then naked, cinereous tan-coloured; stem stuffed, spongy, of the same colour; gills crowded, tan-coloured, flesh and milk hardly acrid, white, then saffron coloured.—*Cooke Illus. t. 996.*

In woods.

Pileus 1-4 in. broad. Stem $1\frac{1}{2}$ -3 in. long, 3-5 lines thick. Spores 10-12 μ diam.

1169. *Lactarius (Russulares) picinus*. Fr. Hym. Eur. 435.

Picinus = pitch-black.

Pileus fleshy, rigid, convex, then plane, umbonate, umber-brown, at first velvety, then with the disc becoming smooth, even; stem stuffed, rather spongy, even, smooth, paler; gills adnate, much crowded, ochraceous; milk acrid, white.—*Cooke Illus. t. 997.*

In pine woods.

Pileus 3 in. broad. Stem 2-3 in. long, $\frac{1}{2}$ in. thick. Spores 8 μ diam.

1170. *Lactarius (Russulares) lilacinus*. Lasch. Linn. III., No. 78.

Lilacinus = lilac-coloured.

Pileus fleshy, thin, convex, then depressed, papillate, floccose when dry, granulose, zoneless, rosy lilac; stem stuffed, then

hollow, clad with white meal, pallid; gills adnate, rather distant, pallid flesh-colour; milk acrid, white.—*Fries Hym. Eur.* 435. *Cooke Illus. t.* 998 A.

In woods.

Fragile, pileus 2 in. broad, growing pale. Spores $7\ \mu$ diam.

1171. *Lactarius (Russulares) spinosulus.* *Quel. Champ. Norm. t. 3, f.* 10.

Spinosulus = full of little spines.

Pileus thin, cyathiform, with an acute umbo, clad, especially towards the margin, with minute erect spines, often zoned and spotted, flesh-colour, brick red, and rosy-lilac; stem hollow, slender, flexuous, rugose, granulate, fragile, shining, of the same colour, growing paler; gills decurrent, narrow, thin, yellow flesh-colour, at length yellowish. Milk white and peppery.

On the ground.

var. **violaceus.** *Cooke Illus. t.* 998 B.

Pileus rosy-violet, margin incurved; stem pale, almost smooth, stuffed.

On the ground.

* * *Pileus smooth, polished.*

1172. *Lactarius (Russulares) volemus.* *Fr. Hym. Eur.* 435.

Volemus = a certain large pear.

Pileus fleshy, compact, *rigid*, plane, then depressed, obtuse, dry, *golden tawny*, at length *rimoso-rivulose*; stem solid, hard, blunt, *pruinose*; gills crowded, white, then yellowish; milk *copious*, *sweet*, white.—*Huss. i., t.* 87. *Cooke Illus. t.* 999.

In woods. Edulent.

Pileus 3 in. broad. Stem $2\frac{1}{2}$ in. long, $\frac{3}{4}$ -1 in. thick. Spores $5 \times 6\ \mu$ diam.

1173. *Lactarius (Russulares) ichoratus.* *Batsch. f.* 60.

Ichoratus, from $\iota\chi\omicron\rho$ = serum, lymph.

Pileus fleshy, *thin*, rigid, then soft, plano-depressed, unequal, *even*, smooth, opaque, *tawny*, stem spongy, stuffed, smooth, tawny; gills adnate, rather crowded, white, then ochraceous. *Milk sweet*, white.—*Fr. Hym. Eur.* 436. *Cooke Illus. t.* 1000.

In woods.

Pileus brick-red, zoned, brown at the disc, paler at the circumference, 3.4 in. broad. Stem $1\frac{1}{2}$ -3 in. long, 3-5 lines thick. Spores $10 \times 8\ \mu$.

1174. *Lactarius (Russulares) seriffuus.* *De Cand. Fl. Fr.* vi., 45.

Seriffuus = flowing with serum, the watery part of milk.

Pileus fleshy, plane, then depressed, sub-flexuose, dry, smooth, zoneless, *brownish-tawny*; margin inflexed; stem solid, equal, rather incurved, paler, turning yellowish, as well as the crowded gills; milk *sparing*, colour of serum.—*Fr. Hym. Eur.* 436. *Berk. Outl. t.* 13, *f.* 4. *Cooke Illus. t.* 1012.

In woods.

Spores 7-8 μ diam.

1175. *Lactarius (Russulares) mitissimus.* *Fr. Hym. Eur.* 437.

Mitissimus = most mild.

Pileus fleshy, thin, convex, then depressed, *papillate*, dry, zoneless, even, *orange*; stem stuffed, then hollow, smooth, of the same colour; gills crowded, paler; milk *copious*, *mild*, white.—*Cooke Illus. t.* 1001.

In woods and hedgebanks.

Pileus 1-3 in. broad. Stem 1-3 in. long, $\frac{1}{3}$ - $\frac{1}{2}$ in. thick. Spores 10 μ diam.

1176. *Lactarius (Russulares) subdulcis.* *Bull. Champ. t.* 227.

Subdulcis = almost sweet.

Pileus fleshy, thin, *papillate*, at length depressed, polished, even, zoneless, *rufous-cinnamon*; stem stuffed, then hollow, equal, somewhat pruinose, *becoming rufous*, as well as the crowded, fragile gills; milk *rather mild*, white.—*Fr. Hym. Eur.* 437. *Sow. t.* 204. *Bolt. t.* 3. *Cooke Illus. t.* 1002.

In woods.

Pileus 2-3 in. broad. Stem 1-2 in. long, 2-4 lines thick. Spores 10 μ diam.

1177. *Lactarius (Russulares) camphoratus.* *Bull. Champ. t.* 567, *f.* 1.

Camphoratus = smelling of camphor.

Strong-scented, pileus fleshy, thin, depressed, dry, *somewhat zoned*, smooth, brownish-red; stem stuffed, sub-undulate, of the same colour; gills crowded, *yellowish-red*; milk *mild*, white.—*Fr. Hym. Eur.* 437. *Cooke Illus. t.* 1013.

In woods.

Pileus but little exceeding an inch broad, acquiring and maintaining a strong odour in drying. Spores 9 μ diam.

var. **Terrei.** *B. & Br. Ann. Nat. Hist. No.* 1673.

Terr'e, in honour of Michael Terry.

Pileus ($\frac{1}{2}$ in. broad) bay-brown, corrugated, depressed. Stem

hollow, thickened at the base, of the same colour as the pileus, clad with orange down. Gills decurrent, pallid.

On the ground.

Specimens afterwards placed by Berkeley with *L. camphoratus*. Cæsпитose, odour sweet.

var. **cimicarius**. *Batsch. f.* 69.

Dusky ferruginous. Pileus plane, then infundibuliform; margin unequally sinuate, lobes convex, pulvinate; stem opaque, more or less dark in colour, hollow substance soft and dry; gills rather broad, dusky ochre; milk limpid, like serum. Odour of bugs.—*Cooke Illus. t.* 1013 B.

On the ground.

1178. Lactarius (Russulares) subumbonatus. *Lind. Bot. Not.* 1845.

Subumbonatus = with a slight umbo.

Pileus fleshy, thin, convex, then depressed, rather umbonate, rugose, punctate, dark cinnamon, without zones, at length undulated, repand, flesh grey, then yellowish; stem stuffed, rufescent; gills adnate, flesh-colour, then rufescent; milk watery white.—*Fr. Hym. Eur.* 437. *Cooke Illus. t.* 986 A.

On the ground.

Odour foetid when old. Very closely related to *L. camphoratus*.

1179. Lactarius (Russulares) obnubilus. *Lasch. Linn. No.* 71.

Obnubilus = over-crowded, dark.

Pileus fleshy, thin, convex, then umbilicate, smooth, somewhat striate, zoneless, sooty-brown; stem stuffed, then hollow, thin, paler; gills rather crowded, turning yellowish; milk rather mild, white.—*Fr. Hym. Eur. p.* 438. *Cooke Illus. t.* 1014 A.

In woods.

Small, fragile, pileus scarcely exceeding one inch.

1180. Lactarius (Russulares) minimus. *Sm. in Journ. Bot.,* 1873, p. 205.

Minimus = least, smallest.

Pileus fleshy, pulvinate, excentric, pallid clay-colour, margin incurved; stem solid, short; gills rather decurrent, distant, arcuate, of the same colour. Milk copious, mild.—*Fr. Hym. Eur.* 438. *Cooke Illus. t.* 986 B.

In pastures.

Pileus very small, not exceeding half an inch.

Tribe 4. *Pleuropus*.

Stem excentric or lateral.

1181. *Lactarius (Pleuropus) obliquus*. Fr. Hym. Eur. 438.

Obli'quus = slanting, oblique.

White, turning yellowish. Pileus fleshy, thin, plano-depressed, oblique, zoned with grey, lobate, silky; stem stuffed, then hollow, rather excentric, curved; gills crowded, white. Milk white.—*Cooke Illus. t. 1014 B.*

On trunks, etc.

Spores 6 μ diam.

GEN. 10. **RUSSULA.** Pers. in Fries Epic. 349.

Russ'ula, from their frequently reddish appearance. *Russus* = red.

Veil none. Hymenophore descending unchanged into the vesiculose trama; gills rigid, fragile, without milk, edge acute. Spores round, often echinulate, white, or turning yellowish.

Terrestrial, fleshy, putrescent fungi. Stem polished, pileus at first, or at length depressed.

Ser. I. COMPACTÆ. Pileus everywhere fleshy, margin at first turned in, always without striæ. Without distinct viscid pellicle.

Flesh compact, firm. Stem solid, fleshy, gills unequal.

1182. *Russula (Compactæ) nigricans*. Fr. Hym. Eur. 439.

Nigricans = becoming black.

Pileus equally fleshy, compact, umbilicate, depressed, dingy-olive; margin inflexed, without striæ; stem solid, blunt, at length charry-black; gills rounded, thick, distant, unequal.—*Sow. t. 36. Huss. t. 73. Cooke Illus. t. 1015.*

In woods.

var. **albo-nigra.** *Krombh. t. 70, f. 16.*

Pileus fleshy, convexo-plane, depressed in the middle, at length infundibuliform, viscid, whitish, smoky about the margin, flesh white, turning black when broken; stem solid, stout, dusky, becoming blackened; gills decurrent, crowded, unequal, dusky whitish.—*Fr. Hym. Eur. 440. Cooke Illus. t. 1016.*

In grassy places.

1183. *Russula (Compactæ) adusta*. Fr. Hym. Eur. 439.

Adusta = scorched.

Pileus equally fleshy, compact, depressed, nearly infundibuliform; margin at first inflexed and smooth, then erect and without

striae; stem solid, blunt, *dingy-cinereous*; gills adnate, then decurrent, *thin, crowded, unequal*.—Cooke *Illus. t.* 1051.

In woods.

Spores 8 μ .

1184. *Russula (Compactæ) densifolia*. Seer. Myco. I., 476.

Densifolia = with the gills close-set.

Pileus fleshy, compact, convex then depressed, margin inflexed, smooth, not striate, whitish becoming fuliginous, grey, or brownish, and blackened in the centre. Stem short, cylindrical, smooth, a little pruinose, whitish, then grey, and at length blackish. Substance white, reddish on exposure to the air, and at length black. Gills adnato-decurrent, unequal, *thin*, white or with a rosy tint.—Cooke *Illus. t.* 1017.

On the ground.

Smaller than *R. nigricans*, the gills thinner, and more numerous. It differs from *R. adusta* in the flesh turning red on exposure.

1185. *Russula (Compactæ) semicrema*. Fries *Hym. Eur.* 440.

Semi'crema = half burnt. *Cremo* = I burn.

Pileus equally fleshy, firm, polished, *white, unchangeable*, margin involute, smooth, without striae; stem solid, stout, white, *turning black*, gills decurrent, thin, crowded, white.—Cooke *Illus. t.* 1067.

Amongst leaves.

1186. *Russula (Compactæ) delica*. Fr. *Hym. Eur.* 440.

De'lica = weaned. Because it is like *Lactarius vellereus* in appearance, but is without milk.

Pileus equally fleshy, firm, umbilicate, even, *shining*; margin involute, smooth, without striae; stem solid, compact, white; gills *decurrent, thin, distant*, white.—Cooke *Illus. t.* 1068.

In woods, usually of pine.

Spores 8-10 \times 6-8 μ .

1187. *Russula (Compactæ) elephantina*. Fr. *Hym. Eur.* 440.

Elephant'ina = of ivory whiteness.

Pileus equally fleshy, firm, umbilicate, convex, smooth, tan-coloured, becoming dusky, margin turned in, wavy, paler, without striae; stem hard, stout, white; gills *obtusely adnate, arcuate, rather crowded, thin*, white (spotted gilvous).—Bolton *t.* 28?

In woods.

Much the habit of *Russula fetens*. Hitherto it depends chiefly as a British species on Fries's quotation of Bolton's figure.

1188. *Russula (Compactæ) mustelina.* Fries Hym. Eur. 441.

Musteli'na = weasel-coloured.

Pileus equally fleshy, firm, convex then depressed, opaque, margin reflexed, even; stem solid, firm, pallid; gills *adnexed*, rounded behind, crowded, connected, white, a few short ones.—Cooke *Illus. t.* 1018.

In woods.

Ser. II. FURCATÆ. Pileus compact, firm, with a thin, closely adnate pellicle, margin abruptly thin, at first inflexed, then spreading, *acute, even.* Stem at first compact, at length spongy within. Gills rather forked, mixed with a few shorter ones, commonly attenuated both ways, thin, and usually narrow.

1189. *Russula (Furcatæ) olivascens.* Fr. Hym. Eur. 441.

Olivascens = becoming olive-coloured, somewhat olive.

Pileus everywhere fleshy, flattened, umbilicate, *olive, with the disc becoming yellow*; margin even, stem firm, white; gills attenuated behind, crowded, almost equal, *white, then turning yellowish.*—Cooke *Illus. t.* 1035.

In shady woods.

Spores 11-12 μ .

1190. *Russula (Furcatæ) furcata.* Fr. Hym. Eur. 441.

Furcata = forked.

Mild, at length bitter. Pileus fleshy, rigid, plane, then depressed and infundibuliform, *even, somewhat shining, with a silky lustre*, at length smooth; margin even, acute; stem stout, firm, *even*, attenuated downwards; gills *adnato-decurrent, rather thick*, somewhat distant, forked, white, as well as the stem.—Cooke *Illus. t.* 1036.

In woods.

Spores 9 μ .

var. **pictipes.** Cooke *Illus. t.* 1086.

Pict'ipes = with a painted stem (*pes*).

Mild. Pileus plane, then depressed (4-6 in.), darker at the disc, even; margin even, or at length slightly striate. Stem stout, a little attenuated downwards (4-5 in. long, 1 in. thick), rosy at the apex, tinted green below, even, gills adnate, rather distant, white; cuticle of the pileus separable, flesh rosy beneath (spores 8 μ diam.).

Under trees.

var. **ochroviridis**. *Cooke Illus. t. 1100.*

Ochro-vir'idis = ochrey-green.

Pileus fleshy, flattened, then depressed (4in. or more), at first viscid, polished when dry, with a thin adnate pellicle, ochraceous towards the margin, disc olivaceous or fuliginous; margin spreading, even, acute; stem short, thick, 2in. long, 1in. thick, reticulately rugulose, white, rarely growing pallid, flesh *fuliginous* when cut, stuffed, spongy within; gills attenuated both ways, lanceolate (6 mm. broad in the centre), crowded, many furcate, white, becoming a little dirty white when old. Spores white, subglobose ($9 \times 7 \mu$), faintly granular. Taste mild.

On the ground.

Resembles *R. ochroleuca* in the rugose stem, but differs in not becoming cinereous, in the dark, dingy olive centre of the pileus, narrow gills, discoloration of the flesh, and the mild taste. In habit it resembles *R. furcata*, but differs in the paler greenish ochre pileus, narrower gills, rugose stem, and discoloured flesh.

1191. *Russula (Furcatae) sanguinea*. *Bull. Champ. t. 42.*

Sanguin'ea = of the colour of blood.

Acrid. Pileus fleshy, firm, convex, then gibbous-depressed and infundibuliform, at length even, *moist*; *margin thin, acute, even*; stem spongy or solid, slightly striate, white or reddish; gills decurrent, thin, very crowded, somewhat forked, connected, white. —*Fr. Hym. Eur. 442. Cooke Illus. t. 1019.*

In woods.

1192. *Russula (Furcatae) rosacea*. *Fr. Hym. Eur. 442.*

Rosa'cea = rosy.

At length acrid. Pileus compact, convexo-plane, *unequal, viscid, then dry, variegated with spots*; *margin acute, even*; stem spongy or solid, even, white, or reddish; gills adnate, rather crowded, plane, unequal, white, divided behind. —*Bull. t. 509, f. Z. Cooke Illus. t. 1020.*

In woods.

Spores 8μ .

1193. *Russula (Furcatae) maculata*. *Quel. Soc. Bot. Fr., 1877, t. 5, f. 8. Sacc. Syll. 1804.*

Macula'ta = spotted.

Pileus solid, convex, then plane, viscid, reddish flesh-colour, then pallid, then decoloured, spotted with purple or brown, margin undulate, and often darker (3in. diam.), flesh white, *peppery*, reminding one of the odour of rose; stem short, solid, reticulated striate, white or somewhat rosy, then spotted with ochre. Gills

attenuated behind, adnate, bifurcate, *pallid sulphur*, then somewhat *peach-colour*. Spores 10 μ diam.—*Cooke Illus. t.* 1069.

In woods. Epping Forest.

Somewhat like *R. depallens*, but peppery, and without a grey stem, but with yellow gills.

1194. *Russula (Furcatæ) sardonias*. Fr. Hym. Eur. 442.

Sardonias = a certain bitter plant. *Sapor acris* is Schaeffer's diagnosis of the species.

Pileus fleshy, firm, convexo-plane, then depressed, smooth; cuticle thin, adnate, viscid, changing colour; *margin even*; stem spongy or solid, short, *white or reddish*; gills adnate, *much crowded*, somewhat forked, *white, then yellowish*.—*Cooke Illus. t.* 1037.

Near paths in fir woods.

Spores 9-10 μ .

1195. *Russula (Furcatæ) depallens*. Fr. Hym. Eur. 442.

Depallens = becoming pale.

Mild. Pileus fleshy, firm, *undulate or irregular*, even, opaque; cuticle thin, viscid, adnate, turning pale; *margin even*, at length slightly striate; stem firm, attenuated downwards, *white, becoming cinereous*; gills adnexed, crowded, fragile, furcate behind, whitish.—*Cooke Illus. t.* 1021.

In pastures.

1196. *Russula (Furcatæ) purpurea*. Gillet. Tab. Anal. p. 47.

Purpur'ea = purple.

Pileus fleshy, at first hemispherical, then convex, and more or less depressed in the centre, rugose-plicate, dark purple, darker in the centre, *margin even*, then faintly striate (6-10 cm. diam.), flesh yellowish, red beneath the cuticle, stem slightly incrassated at the base longitudinally striate, white at the apex, rosy in the middle, yellowish at the base; gills rounded, broad, often bifid, white, then yellowish.—*Cooke Illus. t.* 1022.

Under larch.

1197. *Russula (Furcatæ) cœrulea*. Pers Syn. p. 445.

Cœrul'ea = azure.

Mild. Pileus fleshy, convex, flattened or depressed, polished, *margin even*; stem spongy, solid, firm, white; gills adnate, nearly equal, turning yellowish, acute at the apex.—*Fries Hym. Eur.* 443. *Cooke Illus. t.* 1052.

In woods.

Spores 12. μ .

1198. *Russula (Furcatae) drimeia.* *Cooke in Grevillea* x., p. 46.

Drimeia, δριμεῖα, fem. of δριμύς = pungent.

Acid, peppery. Pileus compact, firm, convex, then depressed, scarcely viscid when moist, opaque when dry, bright purple; margin sub-incurved, even; stem solid, firm, cylindrical, equal, tinged with purple; gills adnexed, scarcely crowded, narrow and furcate at the base, at first pale sulphur, yellow, then deeper yellow, never white; spores pale ochre.—*Cooke Illus. t.* 1023.

On the ground, amongst larch.

Pileus 2-4 inches broad. Stem 2-3 inches long, $\frac{1}{2}$ – $\frac{3}{4}$ inch thick. So intensely peppery that after testing a small fragment, the tongue tingled for more than half an hour. The colour and habit similar to *R. Queletii*, but distinguished by the yellow gills, ochraceous spores, and intensely peppery taste.

Ser. III. RIGIDÆ. Pileus destitute of a viscid cuticle, absolutely dry, rigid, cuticle commonly breaking up in granules or flocci. Flesh thick, compact, firm, vanishing short of the straight margin, which is never involute, and always without striæ. Stem solid, at first hard, then spongy. Gills a few dimidiate, others divided, rigid, dilated in front, running out with a broadly dilated apex, hence the margin of the pileus is obtuse.

1199. *Russula (Rigidæ) lactea.* *Pers. Syn. p.* 439.

Lact'eu = milky.

Mild, milk-white. Pileus fleshy, compact, unpolished, then rivulose; margin straight, thin, obtuse, even; stem solid, compact, obese; gills free, thick, distant, rigid, slightly forked.—*Fr. Hym. Eur.* 443. *Cooke Illus. t.* 1070.

On the ground. Esculent.

var. *incarnata.* *Quel. Ass. Fr.*, 1882, p. 10.

Incarnata = blood-red.

Pileus convex, depressed, farinose, then areolate, white, tinged with rose, at length tan coloured, growing pale, flesh white, sweet. Stem stuffed, firm, pruinose, white, gills adnate, broad, furcate, rigid, white, then yellowish.—*Cooke Illus. t.* 1071.

Under fir trees.

Spores 9 μ .

1200. *Russula (Rigidæ) virescens.* *Schæff. Icon. t.* 94.

Virescens = green.

Mild. Pileus fleshy, firm, globose, then expanded and umbilicate, innato-flocculose, or areolate and warted; margin straight, obtuse, even; stem spongy or solid, stout, sub-rivulose, whitish; gills free, rather crowded, unequal, and forked, whitish.—*Fr. Hym.*

Eur. 443. *Berk. Outl. t.* 13, *f.* 6. *Huss.* 11., *t.* 11. *Cooke Illus. t.* 1039.

In woods. Esulent.

Spores 7-8 μ .

1201. *Russula (Rigidæ) cutefracta.* *Cooke. in Grerillea x.* 46.

Cu'tefracta = with the skin broken.

Mild. Pileus fleshy, firm, dry, opaque, variable in colour, green, purple, dull red, etc., convex, then a little depressed in the centre, cuticle *cracking* from the margin inwards into *minute* firmly adnate *areolæ*, otherwise even; flesh beneath the cuticle *tinged with purple*; stem firm, solid, nearly equal, or a little attenuated above, smooth, slightly tinged with purple; gills somewhat crowded, narrowed behind, furcate, adnexed, or nearly free, white.—*Cooke Illus. t.* 1024, 1040.

On the ground in woods.

Pileus 3-4 inches or more. Stem 3 inches long, often 1 inch thick. Allied to *R. virescens*, which it resembles in the cracking of the cuticle, but differs in the purple tint beneath, even in green specimens, and in the tinted stem, as well as in the colour of the pileus, which is of a darker and different shade of green, and sometimes of a deep bluish-purple, as well as of a madder-red.

Spores 10 μ .

1202. *Russula (Rigidæ) lepida.* *Fr. Hym. Eur.* 444.

Lep'ida = pretty.

Mild. Pileus fleshy, compact, convex, then depressed, unpolished, *silky, rimoso-squamose*, becoming pale; margin patent, obtuse, even; stem solid, compact, *even, white or rosy*; gills rounded, rather thick, somewhat crowded, many of them forked, white.—*Huss.* 11., *t.* 32. *Hogg. & Johnst. t.* 4. *Cooke Illus. t.* 1072, 1073.

In woods. Esulent.

Spores 10 \times 8 μ .

1203. *Russula (Rigidæ) rubra.* *Fr. Hym. Eur.* 444.

Rubra = red.

Acrid. Pileus fleshy, rigid, convex, then plane or depressed, dry, *polished, becoming even*; margin patent, obtuse, without striæ; stem solid, hard, stout, white, or red; gills obtusely adnate, rather crowded, whitish, often forked and dimidiate.—*Cooke Illust t.* 1025.

In woods.

Spores 10 μ .

var. **sapida**. *Cooke Illus. t.* 1087.

Sapida = of a mild taste.

Large, fleshy, plane, then depressed, dark purple, shining, dry or rather viscid in wet weather, margin quite entire, even; stem straight, solid, stuffed, white, somewhat cylindrical; gills fleshy, often furcate, broad, white, entire. Flesh firm, taste mild.—*Russula atropurpureus*, *Krombh. t.* 64, *f.* 5-6.

Amongst grass.

Referred by Fries to *Russula emetica*, but the persistently mild taste and other points separates it from that species. Pileus 3-4 in. diam., with the appearance of our usual form of *R. rubra*. It is somewhat doubtful whether it can be regarded as other than a mild variety of that species.

Spores 10 μ .

1204. *Russula (Rigidæ) Linnæi*. *Fries Hym. Eur.* 444.

Linnæi = in honour of Linnaeus.

Mild. Pileus everywhere fleshy, plane, then depressed, *polished*, dry, smooth, margin spreading, obtuse, without striæ, *flesh spongy*, compact, white, stem spongy, solid, stout, rivulose, red; *gills adnate*, rather *decurent*, somewhat thick, white, turning yellowish, sometimes dichotomous and anastomosing behind.—*Cooke Illus. t.* 1026.

In woods.

Spores $8 \times 10 \mu$.

1205. *Russula (Rigidæ) xerampelina*. *Schæff. Icon. t.* 214, 215.

Xerampellina = ξηραμπιλινος, of the colour of withered vine-leaves.

Mild, pileus fleshy, compact, convex, then flattened and depressed, dry, opaque, even, and *cracked*, margin straight, even, *flesh compact*, white, then *turning yellowish*, stem stout, firm, clavate, even, white or reddish, at length soft and spongy; gills adnexed, rather crowded, forked behind, *white*, then tan coloured.—*Fr. Hym. Eur.* 445. *Cooke Illus. t.* 1053, 1074.

In woods, chiefly of pine.

Spores $9 \times 8 \mu$ or $9-10 \times 7-8 \mu$.

1206. *Russula (Rigidæ) olivacea*. *Schæff. Icon. t.* 204.

Olivacea = olive-coloured.

Mild; pileus fleshy, convex, then plane or depressed, *silky and squamulose*, margin patent, even, *flesh white or becoming yellowish*; stem firm, ventricose, rosy-pallid, spongy and stuffed within; gills annexed, broad, *yellow*, mixed with shorter ones, and furcate.—*Fr. Hym. Eur.* 445. *Cooke Illus. t.* 1041.

In pine woods.

Spores yellow, 10 μ .

- 1207. *Russula (Rigidæ) serotina.*** *Quel. Soc. Bot. Fr.*, 1878, p. 289, t. 3, f. 11.

Serotina = that comes late, backward.

Pileus globose, a little flattened (2-3 cm.), purplish-bistre or olive, pruinose with white; margin lilac, with the extreme edge whitish. Stem wrinkled, mealy. Flesh tough, white and peppery. Gills eroded, white, with a tinge of yellow. Spores ovoid, rough, 7μ diam.—*Cooke Illus. t.* 1042 A.

Under beech.

Spores 8.9μ .

- 1208. *Russula (Rigidæ) Duportii.*** *Phil. Grevillea*, XIII., 49.

Duportii, in honour of the Rev. Canon J. M. Du Port.

Pileus $1\frac{1}{2}$ - $2\frac{1}{2}$ in. broad, the centre rufous, or flesh-red, margin bluish, compact, fleshy, firm, convexo-plane, depressed, smooth, dry, margin even, obtuse. Stem 1 in. or more high, 5-8 lines thick, spongy, stuffed, minutely striate, glabrous, white, gills rounded behind, broad, distant, white.—*Cooke Illus. t.* 1042 B.

On the ground in woods.

Flesh turns reddish brown when cut and the odour is that of the common crab.

Ser. IV. HETEROPHYLLÆ. Pileus fleshy, firm, margin thin, at first inflexed, then expanded and striate, covered with a thin adnate pellicle, gills many, shorter mixed with longer ones, and others which are furcate. Stem solid, stout, spongy within.

- 1209. *Russula (Heterophyllæ) vesca.*** *Fr. Hym. Eur.* 446.

Vesca = eatable.

Mild, sweet-tasted. Pileus fleshy, firm, umbilicato-convex, then plane and infundibuliform, *venoso-rugose*, and streaked; *reddish flesh colour, disc darker*, flesh under the viscid cuticle reddish; margin even, or remotely striate; stem firm, unequal, *reticulate-rugose*; gills adnate, rather crowded, unequal, and forked, white, as well as the stem.—*Bolt. t.* 1. *Huss. i.*, t. 89. *Cooke Illus. t.* 1075.

In woods. Esculent.

- 1210. *Russula (Heterophyllæ) lilacea.*** *Quel. Bull. Soc. Bot. Fr.* 1876, t. II., f. 8.

Lilac'ea = lilac-coloured.

Pileus convex, then depressed, rather fleshy, viscid, violet or purple, margin growing pale, striate (5-8 cm. diam.), flesh violet under the cuticle; stem spongy, corticate, fragile, pruinose above, rosy at the base; gills distant, ventricose, white, connected by veins.—*Cooke Illus. t.* 1054.

In moist woods.

1211. *Russula (Heterophyllæ) azurea.* Bres. *Fungi Trid. t. 24.**Azur'ca* = azure.

Pileus fleshy, convex, then plane or depressed, soon dry and even, constantly minutely granulose, margin scarcely striate, bright blue, margin sometimes lilac growing pale, cuticle separable (4-6 cm. diam.), stem white, ventricose, or clavate at the base, smooth, rather, rugulose firm, spongy, a little hollow when old (4-5 cm. \times 10-15 mm.), flesh white, mild; gills crowded, equal, attenuated behind, adnexed, and bifid, white, unchangeable. Spores $9 \times 8 \mu$.—*Cooke Illus. t. 1088.*

In fir woods.

1212. *Russula (Heterophyllæ) cyanoxantha.* Schæff. *Icon. t. 93.**Cy'ano-xantha* = blue and yellow.

Mild. Pileus compact, convex, then expanded and depressed, or infundibuliform, viscid, *variegated*; margin remotely and faintly striate, *somewhat blue*; stem spongy, stuffed but firm, equal, smooth, *even*, white; gills rounded behind, broad, little crowded, furcate, mixed with shorter, white.—*Fr. Hym. Eur. 446. Cooke Illust t. 1043, 1076, 1077.*

In woods. Sept.

Spores 8-9 μ .**1213. *Russula (Heterophyllæ) heterophylla.* Fr. *Hym. Eur. 446.****Heterophylla* = with different gills, *i.e.*, in length.

Mild. Pileus fleshy, firm, convexo-plane, then depressed, *even, polished*, cuticle very thin, evanescent; margin thin, even, or densely striate; flesh white; stem solid, firm, nearly equal, *even*, white; gills *attenuated*, nearly free, thin, *very narrow, much crowded*, forked and dimidiate, white.—*Badh. i., t. 10, f. 3; ii., t. 3, f. 3, 4. Price f. 37. Hogg. & Johnst. t. 9. Berk. Outl. t. 13, f. 5. Huss. i., t. 84. Cooke Illus. t. 1044, 1045.*

In woods. Esculent.

Spores 6-7 μ or 7-8 μ .**1214. *Russula (Heterophyllæ) galochroa.* Bull. t. 509, L.M.***Galochro'a* = of the colour of milk.

Small: pileus at first *milk white*, then becoming greenish, rarely spotted with scattered *white floccose* spots; margin even or faintly striate; gills as in *Russula heterophylla*.—*Fr. Hym. Eur. 447. Cooke Illus. t. 1089.*

In birch wood.

Spores 5-6 μ .

1215. *Russula* (*Heterophyllæ*) *consobrina*. Fr. Hym. Eur. 447.

Consobrina = cousin (to neighbouring species).

Very acrid. Pileus fleshy, rather fragile, expanded or depressed, *flesh white*, *cinereous* beneath the *thick viscid cuticle*; margin membranaceous, straight, even; stem spongy, stuffed, firm, *white*, *becoming cinereous*; gills affixed, crowded, white, with many shorter or furcate.—*Cooke Illus. t. 1055*.

In pine woods.

Spores $10 \times 8 \mu$.

var. *sororia*. Fries Hym. Eur. 447.

Sororia = sister (to neighbouring species).

Pileus *convex*, then plane or depressed, *margin striate*; stem even, white, gills rather distant, connected by veins.—*Cooke Illus. t. 1057*.

In pine woods.

Spores 8μ .

var. *intermedia*. Cooke Illus. t. 1056.

Intermedia = intermediate.

Pileus fleshy, depressed, viscid, margin thin, striate, stem usually attenuated downwards, becoming cinereous and striate; gills dirty white. Spores 10μ diam.

On the ground under trees.

1216. *Russula* (*Heterophyllæ*) *fætens*. Pers. Syn. p. 443.

Fætens = stinking.

Acrid, *fætid*. Pileus bullate, then expanded and depressed, *rigid*, cuticle adnate, viscid; disc fleshy; margin widely membranaceous, tuberculoso-sulcate; stem stout, stuffed, then hollow; gills adnixed, *very unequal, and forked*, anastomosing by veins, whitish, at first guttate.—Fr. Hym. Eur. 447. Sow. t. 415. Cooke Illus. t. 1046.

In woods. July—Sept.

Spores $8-9 \mu$.

1217. *Russula* (*Heterophyllæ*) *subfætens*. Smith, Journ. Bot., 1873, p. 337.

Sub-fætens = more or less stinking; resembling *R. fætens*.

Pileus bullate, subviscid, disc fleshy, margin submembranaceous; gills thick, distant, and branched; stem not so stout as in *R. fætens*,

smaller, odour somewhat disagreeable; taste slightly acrid.—
Cooke Illus. t. 1047.

On the ground.

Spores $10 \times 8 \mu$.

1218. *Russula (Heterophyllæ) fellea.* Fries Hym. Eur. 447.

Fell'ea = full of gall, bitter.

Very acrid. Pileus fleshy, thin, convex, then plane, polished, opaque, *not growing pale*, margin even, at length striate, *flesh firm*, stem spongy, stuffed, then hollow, even; gills adnate, crowded, nearly equal, or bifid behind, white, *then straw colour*.—*Cooke Illus. t.* 1058.

In beech woods.

Whole plant*straw-coloured.

1219. *Russula (Heterophyllæ) elegans.* Bres. Fun. Trid. t. 25.

El'eans = pretty.

Pileus fleshy, thin, convex, then rather depressed; margin tuberculose, striate when old, viscid, bright rosy flesh colour, soon ochraceous at the circumference, wholly *densely granulate* (3-5 cm.); stem spongy, stuffed, then hollow, a little thickened at the base, white, ochraceous below, rather rugulose (3-5 \times 1 cm.), flesh white, turning ochraceous and acrid with age, gills attenuated behind, adnexed or slightly rounded, very crowded, equal, rarely furcate, whitish, becoming with age wholly or here and there *orange ochre*. Spores 8-10 μ diam.—*Cooke Illus. t.* 1027.

In moist woods.

1220. *Russula (Heterophyllæ) Queletii.* Fries Hym. Eur. 448.

Quelet'ii, in honour of Mons. L. Quélet.

Acrid. Pileus compact, campanulate, convex, then plane, *even*, viscid, *dark violet* or dusky, margin slightly striate, *purplish, lilac*; stem spongy, *mealy*, violet-purple, gills attenuated, unequal or forked, *weeping*, white.—*Quel. Jura t.* 24, f. 6. *Cooke Illus. t.* 1028.

In fir woods.

1221. *Russula (Heterophyllæ) expallens.* Gillet Tab. p. 49.

Expallens = becoming pale, losing colour.

Pileus fleshy, firm, rather depressed, viscid, bright purple, centre dark purple (6-8 cm. diam.), at length decoloured, except the disc,

cuticle separable, flesh purple, stem cylindrical, firm, equal, or a little thickened at the base (5-8 × 2 cm.), turning purple, mealy. Gills pallid yellow, furcate at the base, broad.—*Cooke Illus. t. 1029.*

Under trees.

Ser. V. FRAGILES. Pileus more or less fleshy, rigid, but fragile, pellicle always continuous, viscid after rain and rather separable; margin membranaceous, at first connivent, not involute, when mature sulcate or tuberculose. Flesh commonly floccose, lax, friable, stem spongy, at length wholly soft and hollow. Gills nearly all equal, simple, becoming broadest in front, free in the pileus when closed.

* *Gills and spores white.*

1222. *Russula (Fragiles) emetica.* *Fr. Hym. Eur. 448.*

Emetica = making sick, inciting to vomit.

Acrid. Pileus fleshy, expanded or depressed, polished, shining; margin patent, at length sulcate; flesh white, reddish beneath the separable cuticle; stem spongy-solid, firm, elastic, even, white or reddish; gills free, equal, broad, somewhat distant, white.—*Cooke Illus. t. 1030.*

In woods.

Spores 8 μ .

var. **clusii.** *Fries Hym. Eur. 449.*

Clusii = in honour of Clusius.

Pileus convex, then expanded, blood red, flesh white, turning yellowish, gills obsoletely adnexed, at length adnate, pallid, yellowish.—*Cooke Illus. t. 1031.*

In woods.

Spores 10 μ .

var. **fallax.** *Schæf. t. 16, f. 1-3.*

Fallax = deceiving.

Thinner, more fragile, pileus dirty reddish, or variedly coloured, opaque, discoid, gills adnexed, distant, whitish or watery pallid.—*Fries Hym. Eur. 449. Cooke Illus. t. 1059.*

In moist places.

Spores 8 μ .

1223. *Russula (Fragiles) fingibilis.* Britz. *Hym. Sudb.* IV., f. 32.

Fingibilis = imaginary, seeming.

Pileus yellow, convex, then plane or depressed, viscid, darker in the centre (about 2 in. diam.), thin towards the margin, but not striate. Stem equal, soft, white, spongy, at length hollow (2 in. long, $\frac{1}{3}$ in. thick), flesh white, mild, inodorous. Gills rather unequal, attenuated behind, somewhat crowded, thin, white. Spores nearly globose, 8-10 μ .—*Cooke Illus. t.* 1048.

Under trees.

1224. *Russula (Fragiles) pectinata.* Bull. *Champ. t.* 409. N.O.P.

Pectinata = pectinate, like a comb.

Acrid; pileus fleshy, *rigid*, flattened or depressed, opaque, discoid, margin *pectinately sulcate*, flesh *yellowish* beneath the adnate viscid cuticle; stem spongy, stuffed, *rigid*, *striate*, *white*; gills *attenuated* behind, *free*, crowded, *equal*, simple, white.—*Fr. Hym. Eur.* 449. *Cooke Illus. t.* 1101.

In woods.

Smell like that of *R. foetens*; pellicle separable; pileus 3 in. across, disc darker.

1225. *Russula (Fragiles) ochroleuca.* Pers. *Syn.* 443.

Ochro-leuca = ochrey-white.

Acrid. Pileus fleshy, expanded or depressed, polished, cuticle adnate, turning pale; margin patent, *becoming even*; stem spongy, stuffed, firm, *reticulato-rugulose*, *white*, then *cinereous*; gills *rounded behind*, connected, broad, *subequal*, white, then pallid.—*Fr. Hym. Eur.* 449. *Cooke Illus. t.* 1049.

In fir woods.

Spores 10 \times 9 μ .

1226. *Russula (Fragiles) granulosa.* Cooke, *Grevillea.*

Granulosa = mealy.

Acrid. Pileus convex, plane, then depressed or infundibuliform (2-3 in. diam.), at first viscid, ochraceous yellow, disc darker, breaking up into minute granules, margin even or faintly striate when old. Stem 2-3 in. long, $\frac{1}{2}$ -1 in. thick, minutely granular or mealy throughout, granules snow-white at the apex, fuscous below, internally white, spongy; gills rather crowded, somewhat attenuated behind, nearly free, equal, rarely furcate, white; spores rough, subglobose, 12 μ diam., apiculate, white.—*Cooke Illus. t.* 1038.

On the ground, under trees.

Habit nearly that of *R. ochroleuca*, which it also resembles in colour, but differing in the darker and minutely granular disc as well as the mealy stem, which is not at all grey; the cuticle of the pileus is continuous at the margin for some distance along the edge of the gills.

1227. *Russula (Fragiles) æruginea.* Fries. Hym. Eur. 449.

Æruginea = like *verdigris*.

Mild. Pileus convex, then flattened; disc darker, depressed, even, rather dry, *verdigris-green*; margin *striate*; stem *firm*, even, smooth, white; gills attenuated behind, slightly adnexed, rather distant, white.—*Cooke Illus. t. 1090.*

In woods.

Spores 9 μ .

1228. *Russula (Fragiles) citrina.* Gillet Hym. Supp. 6.

Citrina = citron-coloured.

Mild. Pileus fleshy, convex, more or less a little depressed in the middle, rather viscid when moist, smooth, a little wrinkled at the margin when old, of a *bright citron-yellow*, ordinarily uniform, sometimes a little lighter at the margin, and occasionally also slightly tinted greenish (5-10 cent. diam.) At length the centre of the pileus is discoloured and takes a pale ochraceous tint; the epidermis is easily raised at the margin of the pileus. Gills white, slightly decurrent, bifurcate at the base, and occasionally also in the middle, broader at the marginal extremity, insensibly attenuated towards the base. Stem solid, white, *striate*, equal, or a little attenuated at the base, straight, or slightly flexuous; flesh white, rather firm; odour almost none; taste sweet, or very slightly acid.—*Cooke Illus. t. 1078.*

In mixed woods.

1229. *Russula (Fragiles) fragilis.* Pers. Syn. p. 440.

Frag'ilis = breakable.

Very acid; pileus lax, fleshy, thin, plane, depressed, unequal, polished, cuticle thin, becoming pale, opaque, slightly viscid; margin tuberculo-striate; stem stuffed, then hollow, shining; gills fixed, thin, crowded, ventricose, white.—*Hym. Eur. 450. Cooke Illus. t. 1091.*

In woods.

var. *nivia.* Pers. Syn. 438.

Niviea = snowy.

Whole plant white.—*Fr. Hym. Eur. 450. Cooke Illus. t. 1060 B.*

Spores 8 μ .

var. **violacea**. *Quel. Ass. Fr.* 1882, t. 11, fig. 13.

Viola'cea = violet.

Pileus depressed (3-5 cm.), thin, viscid, striate, bright violet with a narrow white margin, sometimes spotted with yellow, green, or olive; flesh soft, white, peppery; stem spongy, then hollow, fragile, slender, striate, pruinose, white; gills adnate, crowded, thin, white; spores 8-9 μ , spinulose.—*Cooke Illus. t.* 1060 A.

In shady woods.

1230. Russula (Fragiles) punctata. *Gillet Tab. An. p.* 48.

Punctata = dotted.

Pileus fleshy (5-6 cm. diam.), margin striate, attenuated, convex, then flattened, viscid, rosy, darker in the centre, punctate with dark rufous point-like tubercles, growing pale when old. Stem stuffed, of the colour of the pileus, attenuated at the base and whitish (3-4 \times 1 cm.). Gills adherent, convex, white, then yellowish, edge often reddish; flesh white, reddish under the cuticle of the pileus, sweet.—*Cooke Illus. t.* 1032.

In woods.

Spores 8-9 μ .

**** Gills and spores white, then yellowish or bright lemon yellow.**

1231. Russula (Fragiles) veterinosa. *Fr. Hym. Eur.* 450.

Veterinosa = sleepy, languid. From its doubtful affinities.

Acrid. Pileus loosely fleshy, plane, then depressed, polished, cuticle thin, adnate, becoming pale; margin membranaceous, even; stem spongy, then hollow, soft, equal, even, fragile, white; gills adnate, narrow, broader behind, unequal, straw-coloured.—*Cooke Illus. t.* 1033, 1092.

On the ground.

Spores 8-9 μ .

1232. Russula (Fragiles) integra. *Linn. Succ. No.* 1230.

Int'egra = whole; perfect in form.

Mild. Pileus fleshy, expanded or depressed, with a viscid cuticle, growing pale; margin thin, at length sulcate and tuberculose; flesh white; stem spongy, stuffed, even, ventricose, white; gills nearly free, very broad, equal, distant, white, then pallid, powdered with yellow.—*Fr. Hym. Eur.* 450. *Cooke Illus. t.* 1034, 1093.

In woods.

Spores 10 μ .

var. **alba**. *Cooke Illus. t. 1094.*

Alba = white.

Whole plant of a creamy white.

On the ground.

1233. Russula (Fragiles) decolorans. *Fr. Hym. Eur. 451.*

De-color'ans = changing colour.

Mild. Pileus fleshy, firm, spherical, then expanded or depressed, polished, thin, cuticle becoming pale; margin thin, even; stem spongy, solid, elongated, cylindrical, *rugoso-striate*, *white*, then *cinereous* as well as the flesh; gills adnexed, forked behind, thin, crowded, white, then yellowish.—*Cooke Illus. t. 1079.*

In woods.

1234. Russula (Fragiles) aurata. *With. Arr. IV., 184.*

Aura'ta = golden.

Becoming acrid. Pileus fleshy, *rigid*, convexo-plane, shining; margin at length striate; flesh under the viscid cuticle *lemon-coloured*; stem spongy or compact, rather striate, white or lemon-coloured; gills rounded behind, free, broad, equal, shining, *edge lemon-yellow*.—*Fr. Hym. Eur. 452. Cooke Illus. t. 1080.*

In woods.

1235. Russula (Fragiles) Barlaë. *Quelet. Ass. Fr. 1883, t. VI., f. 12.*

Barlaë, after J. B. Barla, mycologist, of Nice.

Pileus convex, then flattened and depressed ($2\frac{1}{2}$ - $3\frac{1}{2}$ in.), compact, viscid, then dry, even, peach-coloured, yellow, tinged with orange red, sometimes cracking; flesh firm, sweet, white, slightly smelling of melilot, stem fleshy, spongy, firm, silky pruinose, snow white (2 in. long, $\frac{1}{2}$ in. thick), gills white, then becoming pallid ochraceous. Spores sub-globose, granular, $12 \times 10 \mu$.—*Cooke Illus. t. 1061.*

Among grass, under trees.

The flesh of the stem turns red lish-brown when cut, and the odour in age is rather that of crab than of melilot.

var. **cuprea**. *Krombh. t. 66, f. 1-3.*

Cup'reus = coppery.

Pileus convex, then rather plane, obtusely umbonate, at length expanded, depressed in the centre, copper-colour or dark brick red, turning yellowish, centre darkest, smooth, rather shining, somewhat viscid; margin acute, a little inflexed, sulcate. Gills broad, rather thick, equal, bright yellow or orange, arcuate. Stem

slender, curved, attenuated downwards, naked white, then reddish, delicately striate, stuffed, silky and shining.—*Cooke Illus. t. 1095 B.*

In woods.

Spores 8-10 μ .

var. **pulchralis.** *Britz. Sudb. Buss. f. 13.*

Pulchra'lis = like fruit for dessert, beautiful.

Pileus viscid, thin, convex, then flattened and depressed (2 in. diam.), circumference *ochraceous*, centre *spotted with red* or purple, margin thin, deeply striate and often split. Stem equal, ventricose, or thickened at the base, fragile, white; gills broad, distant, rather thick, whitish, then *ochraceous yellow*. Spores nearly globose, $9 \times 8 \mu$.—*Cooke Illus. t. 1095 A.*

In woods.

1236. Russula (Fragiles) nitida. *Pers. Syn. 357.*

Nit'ida = shining.

Nauseous, *rather foetid*. Pileus somewhat fleshy, becoming rigid, convexo-plane, then depressed, shining, discoid; margin thin, from the first striate and tuberculose; flesh white; stem stuffed, soft, white, growing pallid; gills adnexed, seceding, then crowded, shining, white, then *yellow, naked*.—*Fr. Hym. Eur. 452. Berk. Outl. t. 13, f. 7. Cooke Illus. t. 1062, 1063.*

In woods.

Spores 9 μ .

* * *Gills and spores ochraceous.*

1237. Russula (Fragiles) alutacea. *Fr. Hym. Eur. 453.*

Aluta'cea = like tanned leather.

Mild. Pileus fleshy, expanded or depressed, with a viscid cuticle, growing pale; margin thin, *at length striate, tuberculose; flesh white*; stem spongy, solid, stout, white or reddish, even; gills at first free, thick, equal, somewhat distant, yellow, then *ochraceous tan-coloured, naked*.—*Berk. Outl. t. 13, f. 8. Hogg. & Johnst. t. 15. Cooke Illus. t. 1096, 1097.*

In woods.

1238. Russula (Fragiles) armeniaca. *Cooke Illus. t. 1064.*

Armeni'aca = of the colour of an apricot.

Very fragile. Pileus convex, then depressed (1-1½ in.), smooth,

even, peach colour, paler at the edge, margin thin, even; stem attenuated upwards, smooth, white, hollow; gills adnate, rounded behind, rather broad, somewhat distant, bright ochre, almost egg-yellow.

Amongst grass under trees.

Spores $10 \times 8 \mu$.

1239. *Russula (Fragiles) puellaris*, Fr. *Hym. Eur.* 452.

Puella'ris = girlish, delicate.

Pileus, except the disc, *membranaceous*, conically convex, then flattened or depressed, striate to the margin and tuberculose ($1-1\frac{1}{2}$ in. diam.), livid purplish, becoming yellowish, *disc brown*, always darker, stem soon hollow ($1-1\frac{1}{2}$ in. long), white, becoming yellowish; gills attenuated behind, adnate, thin, crowded, *naked*, white, then pallid yellow.—*Cooke Illus. t.* 1065.

On waysides, in woods, etc.

Spores $9 \times 8 \mu$.

var. *intensior*. *Cooke Illus. t.* 1066.

Pileus darker, nearly the same size, deep purple, nearly black at the disc, stem and gills as above.

In the same places.

The stem has a tendency to become thickened at the base, and turns yellowish where touched.

Spores $10 \times 8 \mu$.

var. *roseipes*. *Secr. Myc. No.* 483.

Rosei-pes = with a rosy stem.

Pileus fleshy, margin thin, convex, then flattened and depressed, viscid, soon dry, rosy flesh colour, rosy orange, or rosy with a tinge of ochre, at first spotted with whitish, at length blanché, margin shortly tuberculate, striate (2-3 in. diam.), gills rather crowded, equal, some dimidiate or furcate, furcate behind and rounded, free, rather distant, sometimes with an adnate tooth, ventricose, whitish, then ochraceous egg-yellow, connected by veins; stem stuffed, lacunose, white, here and there sprinkled with a rosy meal (2 in. long, 8-15 mm. thick), flesh whitish, then rather yellowish, taste and odour pleasant, spores globose, echinulate, ochraceous, $8-10 \mu$.—*Cooke Illus. t.* 1081.

In woods.

Spores as figured $10-11 \times 8-9 \mu$.

1240. Russula (Fragiles) ochracea. *Alb. & Schw. Consp. No. 625.*

Ochra'cea = of the colour of ochre.

Mild. Pileus fleshy, soft, plano-depressed, thin, pellicle viscid, shining, *margin thin, sulcate, flesh ochraceous*; stem spongy, stuffed, soft, striate; gills touching the stem, broad, scarcely crowded, of the same colour.—*Fr. Hym. Eur. 453. Cooke Illus. t. 1050.*

In fir woods.

Spores 12 μ .

1241. Russula (Fragiles) lutea. *Hudson Fl. Angl. 611.*

Lu'tea = golden-yellow.

Mild. Pileus rather firm, plano-depressed, with a viscid cuticle, becoming pale; *flesh white; margin even*; stem stuffed, then hollow, soft, white; gills free, crowded, connected by veins, egg-yellow.—*Fr. Hym. Eur. 454. Cooke Illus. t. 1082.*

In woods.

1242. Russula (Fragiles) nauseosa. *Pers. Syn. 446.*

Nauseo'sa = nauseous.

Rather mild, *strong scented*, fragile; pileus fleshy, thin, plane, rather swollen, then depressed and infundibuliform, viscid; *disc darker, margin sulcate*, submembranaceous, stem stuffed, rather striate, white; gills adnexed, ventricose, *somewhat distant*, yellow, then dingy ochre.—*Fr. Hym. Eur. 454. Cooke Illus. t. 1102 A.*

In pine woods.

1243. Russula (Fragiles) vitellina. *Pers. Syn. p. 442.*

Vitelli'na = of the colour of the yolk of an egg.

Strong-scented, mild. Pileus submembranaceous, at length *tuberculoso-striate, self-coloured*; disc minute, rather fleshy; stem thin; gills free, seceding, equal, saffron-yellow.—*Fr. Hym. Eur. 454. Cooke Illus. t. 1102 B.*

In fir woods.

1244. Russula (Fragiles) chamæleontina. *Fr. Hym. Eur. 455.*

Chamæleonti'na = changing colour like a chameleon.

Mild, fragile. Pileus fleshy, plane or depressed, pellicle thin, discoloured, viscid; margin smooth, then striate; stem hollow, white; gills *thin, much crowded*, even, furcate, yellow.—*Cooke Illus. t. 1098.*

In woods.

GEN. 11. **CANTHARELLUS.** *Adans. Fung. Ord. V.*

Cantharellus, a diminutive from *κάνθαρος* = a sort of drinking-cup.

Hymenophore continuous, with the stem descending in an unchanged trama. Gills thick, between fleshy and waxy, fold-like, rather branched, with the edge obtuse, spores white.

Fleshy, membranaceous, putrescent fungi, without a veil.

I. **MESOPUS.** Pileus entire. Stem central.

Mesopus with the stem in the middle.

* *Pileus and stem solid, fleshy.*

1245. Cantharellus cibarius. *Fr. Hym. Eur. 455.*

Cibarius = suitable for food, *cibus*.

Egg-yellow. Pileus fleshy, firm, at first repand, smooth, at length turbinate; stem solid, attenuated downwards; gills thick, distant, of the same colour.—*Grev. t. 258. Hogg & Johnst. t. 16. Sow. t. 46. Badh. i. t. 9, f. 2, ii. t. 8, f. 1. Price f. 94. Cooke Illus. t. 1103.*

In woods. Common. Esculent.

Spores $9 \times 5.6 \mu$.

var. **rufipes.** *Gillet. Hym. Fr. Ser. 13.*

Rufi-pes = red at the foot.

Stem rufous at the base.—*Cooke Illus. t. 1131 A.*

1246. Cantharellus Friesii. *Quel. Jura. t. 23, f. 2.*

Friesii = in honour of the illustrious Elias Fries.

Pileus fleshy, thin, convex then depressed, villose; somewhat orange colour, stem solid, slender, villose, white at the base, attenuated; gills narrow, fold-like, branched, yellow.—*Fries Hym. Eur. 455. Cooke Illus. t. 1131 B.*

In woods.

Intermediate between *C. cibarius* and *C. aurantiacus*, with the gills of the former and the habit of the latter.

1247. Cantharellus aurantiacus. *Fr. Hym. Eur. 455.*

Aurantiacus = of the colour of an orange.

Nearly orange-colour. Pileus fleshy, soft, depressed, rather tomentose; stem stuffed, unequal; gills crowded, straight, dichotomous, darker than the pileus.—*Sow. t. 413. Cooke Illus. t. 1104*

In fir woods and on heaths. Common.

Gills sometimes paler than the pileus, nearly white. Spores $10 \times 5 \mu$.

1248. *Cantharellus Brownii*. B. & Br., Berk. Outl. p. 216.

Brownii, in honour of J. Brown.

Ochraceous-white, or cream-coloured. Pileus thin, convex, sub-umbonate, obsoletely silky; stem slender, tough, stuffed; folds rather distant, *linear, extremely narrow*, sometimes forked, obtusely decurrent.—*Fr. Hym. Eur.* 456. *Cooke Illus. t.* 1106 A.

Amongst grass.

Spores $7 \times 5-6 \mu$.

1249. *Cantharellus carbonarius*. A. & S. Consp. 375.

Carbonarius, from its growing on charcoal, *carbo*.

Rooting, fasciculate; pileus rather fleshy, *striately squamulose*, umbilicate, bay-brown, *then black*; stem paler; gills straight, white.—*Fr. Hym. Eur.* 456.

On charcoal.

var. **radicosus**. B. & Br. No. 1134.

Radicosus = rooted.

Slender, pileus deeply umbilicate, floccose, *black*, stem *rooting*, pallid; gills white, narrow.—*Cooke Illus. t.* 1105.

On charcoal.

Spores $14-15 \times 7-8 \mu$.

1250. *Cantharellus umbonatus*. Fries Hym. Eur. 457.

Umbonatus = furnished with a boss, *umbo*, like a shield.

Pileus fleshy, thin, *umbonate, then depressed, flocculose, cinereous, then blackish*; stem stuffed, equal, paler; gills straight, crowded, white.—*Cooke Illus. t.* 1106 B.

Amongst moss.

Spores $10 \times 5-6 \mu$.

1251. *Cantharellus albidus*. Fr. Fl. Dan. t. 1293, fig. 1.

Albidus = whitish.

Pileus rather fleshy, infundibuliform, repand, *smooth, pallid*, stem solid, nearly equal, smooth, gills dichotomous, divergent, white.—*Fr. Hym. Eur.* 457. *Cooke Illus. t.* 1107 A.

Amongst moss.

Spores $9 \times 4 \mu$.

**** *Pileus submembranaceous, stem hollow, polished.***

1252. *Cantharellus tubæformis*. Fr. Hym. Eur. 457.

Tubæ-formis = of the form of a trumpet, *tuba*.

Pileus between fleshy and membranaceous, infundibuliform, re-

pand, and lobed, flocculose, brownish, turning pale; stem hollow, smooth, *orange-tawny*, at length compressed, lacunose; gills thick, distant, multifid-branching, yellow or dingy, *naked*.—*Cooke Illus. t. 1108.*

In woods.

Spores $9 \times 7 \mu$.

var. **lutescens.** *Bull Champ t. 473, f. 3.*

Lutescens = yellowish.

Pileus convex, umbilicate, *almost smooth*, rather regular; gills less divided, stem more equal, attenuated upwards.

In woods.

1253. Cantharellus infundibuliformis. *Fr. Hym. Eur. 458.*

Infundibuliformis = shaped like a funnel, *infundibulum*.

Pileus somewhat membranaceous, umbilicate, then infundibuliform, floccoso-rugose, dingy yellow, growing pale; stem fistulose, even, smooth, *yellow*; gills thick, distant, dichotomous, yellow or cinereous, *at length pruinose*.—*Sow. t. 47. Cooke Illus. t. 1109.*

In woods.

Spores $9-10 \times 6 \mu$.

1254. Cantharellus cinereus. *Fr. Hym. Eur. 458.*

Cinereus = of the colour of ashes, *cineres*.

Pileus submembranaceous, infundibuliform, *pervious* to the base, *villososquamulose*, *dingy black*; stem hollow, of the same colour; gills thick, distant, cinereous.—*Bolt. t. 34. Cooke Illus. t. 1110 A.*

In woods.

Spores $7 \times 5 \mu$.

1255. Cantharellus Houghtoni. *Phillips.*

Houghtoni, in honour of the Rev. William Houghton, M.A.

Pileus thin, convex, umbilicate, smooth; stem slender, incrassated at the apex, at first delicately fibrillose; gills subdecurrent, narrow, *pale flesh colour*.—*Cooke Illus. t. 1107 B.*

On the ground.

Pileus 1 in. or more across, dirty-white, with a tinge of flesh colour; stem 2 in. high, 1 line thick, stuffed, rooting at the base, which is more or less cottony; gills scarcely forked, narrow, slightly decurrent, sometimes 2 inches across. Spores $7 \times 4 \mu$.

1256. Cantharellus leucophæus. *Nouvel. Mem. Lille 1831, t. 1, f. 2, 3.*

Leucophæus = appearing white; from λευκός and φαίνα.

Pileus submembranaceous, tough, infundibuliform, *smooth*,

umber; stem *stuffed*, thin, even, of the same colour, a little thickened at the base; gills distant, simple, mixed with others dichotomous or dimidiate, white.—*Fr. Hym. Eur.* 458. *Cooke Illus. t.* 1111 A.

On the ground.

Spores $9 \times 5 \mu$.

1257. *Cantharellus cupulatus*. *Fr. Hym. Eur.* 458.

Cupula'tus = cup-shaped; from *cupula* = a little cup.

Pileus submembranaceous, *plane*, then *infundibuliform*, repand, hygrophanous, when moist smooth and margin striate, when dry flocculose, without striæ; *stem stuffed*, equal, polished, smooth; gills distant, branched and dimidiate, broad, grey.—*Cooke Illus. t.* 1110 B. *Agaricus helvelloides*, *Bull. Champ. t.* 601, *f.* 3.

On the ground.

Spores $7 \times 4 \mu$.

1258. *Cantharellus Stevensoni*. *B. & Br. Ann. N.H.*, No. 1422.

Stevenson'i, in honour of the Rev. John Stevenson, of Glamis.

Pileus orbicular, umbilicate, pallid, smooth, margin inflexed; stem cylindrical, delicately pulverulent, white, then darker; gills decurrent, pallid, brownish behind.—*Cooke Illus. t.* 1111 B.

On rotten wood amongst moss.

Pileus about 2 lines across, stem $\frac{1}{4}$ in. high, $\frac{1}{2}$ line thick, with a little white mycelium at the base. Very near to *C. cupulatus*, but that is very strongly umbonate when young, and the umbo is always visible at the bottom of the umbilicus; the habitat moreover is different.—*B. & Br.*

1259. *Cantharellus reflexus*. *Fries Hym. Eur.* 459.

Reflexus = turned back.

Pileus membranaceous, *campanulate*, *convex*, expanded and inverted, striate, fuscous, then cinereous; *stem fistulose*, smooth, thickened above, gills adnate, decurrent, connected by veins, distant, branched and dimidiate, hoary white.

Amongst grass.

var. **devevus**. *Fries Hym. Eur.* 459.

Devevus = shelving downwards.

Pileus *cucullate*, stem stuffed with a floccose pith, gills simple, cinereous.—*Cooke Illus. Suppl.*

In burnt places.

II. PLEUROPUS. Dimidiate, stem lateral.

1260. *Cantharellus muscigenus*. *Bull. Champ. t.* 288, 498, *f.* 1.

Musci'genus = born of moss.

Pileus submembranaceous, *spathulate*, horizontal, smooth, zoned, brown, then whitish-cinereous; stem lateral, short, *villous at the*

base; gills swollen, distant, branched, of the same colour.—*Fr. Hym. Eur.* 460. *Cooke Illus. t.* 1115 A.

On the larger mosses.

1261. Cantharellus glaucus. *Batsch. f.* 123.

Glaucus = sea-green.

Grey, pileus membranaceous, strap-shaped, ascending, *silky*, without zones; stem lateral, short, *pruinose*, gills fold-like, swollen, distant, dichotomous.—*Fr. Hym. Eur.* 460. *Cooke Illus. t.* 1115 B.

On sandy slopes.

III. RESUPINATI. Pileus entire, at first cup-shaped, fixed at the vertex, then reflexed.

1262. Cantharellus retirugus. *Fr. Hym. Eur.* 460.

Retiru'gus, from *rete* = a net, and *ruga* = a wrinkle.

Membranaceous, expanded, repand, lobed, whitish, cinereous, fixed behind with little threads; gills radiating from the centre, very thin, reticulated.—*Sow. t.* 348. *Berk. Outl. t.* 14, f. 2. *Cooke Illus. t.* 1112 A.

On mosses, in swamps.

Spores $10 \times 8 \mu$.

1263. Cantharellus lobatus. *Fr. Hym. Eur.* 461.

Loba'tus = lobed.

Gelatinous, membranaceous, sessile, horizontal, ear-shaped, *dirty rufous*, externally convex, smooth, beneath with crispate folds, divided near the margin.—*Bolton t.* 177. *Cooke Illus. t.* 1112 B.

On mosses in swamps.

GEN. 12. **NYCTALIS.** *Fr. Gen. Hymen.*

Nyct'alīs, from *νύξ* = night.

Hymenophore continuous with the stem. Gills fleshy, thick, juicy, with an obtuse edge, not decurrent on the stem or fold-like. Veil floccosely pruinose.

Sect. 1.—SPELEÆ. Gills crowded, somewhat coalescing.

1264. Nyctalis caliginosa. *Smith Jour. Bot.,* 1873, p. 337.

Caligino'sa = full of darkness, *calige*.

Pileus very fleshy, white when dry, flocculoso-pruinose, when wet marked with colours (as in *Ag. butyraceus*); margin involute, slightly exceeding the gills, gills thick, branched, *decurrent*; stem solid, flocculoso-pruinose, base naked; odour and taste rank and disagreeable (like *Polyporus squamosus*).—*Cooke Illus. t.* 1132 A.

Amongst earth and dead leaves.

A doubtful species. Probably a diseased state of some *Clitocybe*. Spores $4 \times 2\frac{1}{2} \mu$.

Sect. 2.—**PARASITICÆ.** Gills distinct, distant. On rotting fungi.

1265. *Nyctalis asterophora.* Fr. Hym. Eur. 463.

Asterophora = bearing stars ; from ἀστήρ = a star, and φέρω = I bear.

Pileus somewhat fleshy, conical, then hemispherical, cuticle flocculoso-pruinose, breaking up into a fawn-coloured stratum ; stem stuffed, pruinose, then brownish, twisted ; gills adnate, distant, rather forked, straight, dingy.—*Cooke Illus. t. 1132 B.*

On dead *Russula nigricans*.

1266. *Nyctalis parasitica.* Fr. Hym. Eur. 464.

Parasitica = parasitic.

Pileus somewhat fleshy, conical, then expanded, unequal, cuticle persistent, grey, pruinose ; stem minutely fistulose, flocculoso-villous, whitish ; gills adnate, thick, distant, at length contorted and anastomosing, brownish.—*Sow. t. 543. Berk. Outl. t. 19, f. 2. Cooke Illus. t. 1113.*

On *Russula adusta* and *R. fætens*.

Spores $5 \times 4 \mu$.

GEN. 13. *MARASMIUS.* Fr. Gen. Hym.

Marasmius, from μαράω = I wither away.

Fungi tough, dry, shrivelling, but not putrescent, reviving when moistened. Hymenophore continuous with the stem, but heterogeneous, descending into the trama ; veil absent. Stem cartilaginous or horny. Gills tough, rather distant, with an acute entire edge.

Sect. 1.—**COLLYBIA.** Pileus between fleshy and tough, at length rather leathery, sulcate or corrugated, margin at first involute. Stem somewhat cartilaginous, mycelium floccose, not manifest in a few species.

A. SCORTEI. Stem solid or stuffed, then hollow, fibrous within, externally the stem clad with a villose fugitive down. Gills separating from the stem, free.

1267. *Marasmius urens.* Fr. Hym. Eur. 465.

Urens = burning. From the taste.

Acrid. Pileus between fleshy and coriaceous, convex, then plane, smooth, even, at length wrinkled or rivulose ; stem fibrous, solid, rigid, pallid, mealy with white fibrils, and clothed with white down at the base ; gills free, joined behind, pallid, somewhat yellowish, becoming brownish, at length remote, distant, firm.—*Berk. Outl. t. 14, f. 3. Price. f. 13. Cooke Illus. t. 1116.*

In woods.

Spores $8 \times 4 \mu$.

1268. Marasmius peronatus. *Bolton Fungi* t. 58.

Perona'tus = booted. *Pero* = a boot made of raw hide.

Acrid. Pileus between coriaceous and membranaceous, convexo-plane, opaque, at length lacunose; margin striate; stem fibrous, stuffed, outer coat villous, yellow, then rufescent, base peronate and strigose; gills adnexed, seceding, rather thin and crowded, pallid, then rufescent.—*Fr. Hym. Eur.* 465. *Sow. t.* 37. *Berk. Outl. t.* 14, f. 4. *Cooke Illus. t.* 1117.

In woods, amongst leaves. Common.

Spores $10 \times 6\text{--}7\ \mu$.

1269. Marasmius porreus. *Fr. Hym. Eur.* 466.

Porr'eus, from *porrum* = a leek; from the alliaceous odour.

Strong scented. Pileus between coriaceous and membranaceous, convex, then expanded, striate, flaccid, disc of the same colour, even; stem stuffed, then hollow, tough, without juice, incrassated at either end, reddish-brown, pubescent; gills free, seceding, distant, firm, yellowish, becoming pallid.—*Sow. t.* 81. *Cooke Illus. t.* 1133.

In woods, amongst leaves.

Spores $4 \times 3\frac{1}{2}\ \mu$.

** *Stem naked at the base, often interwoven with twisted fibres.*

1270. Marasmius oreades. *Fr. Hym. Eur.* 467.

Ore'ades = Ὀρειάδες = mountain nymphs. From its forming "fairy rings."

Pileus fleshy, tough, convexo-plane, then somewhat umbonate, smooth, growing pale; stem solid, equal, with a villous interwoven coat, pallid, base naked; gills free, broad, distant, cream-coloured.—*Bolt. t.* 151. *Grev. t.* 323. *Sow. t.* 247. *Berk. Outl. t.* 14, f. 5. *Budh. i. t.* 8, f. 3, ii. t. 7, f. 4. *Cooke Illus. t.* 1118.

In exposed pastures, forming rings. Esculent.

Spores $8 \times 5\ \mu$.

1271. Marasmius plancus. *Fr. Hym. Eur.* 468.

Plancus = flat-footed, flat.

Mild, pileus fleshy, tough, plane, then depressed, obtuse, even, growing pale; stem hollow, soon compressed, with a villous white bark, rather attenuated and naked at the base, gills receding, free, distant, linear, darker.—*Cooke Illus. t.* 1119 A.

In woods.

1272. Marasmius scorteus. *Fr. Hym. Eur.* 468.

Scort'eus = made of hides or leather, leathery.

Mild. Pileus rather fleshy, tough, convex, then flattened, *obtus*, without striae, at length rugulose, growing pale; stem obsoletely *fistulose*, *equal*, tough, white, then tawny, delicately *pruinose* at the apex, gills rounded, free, broad, distant, white.—*Cooke Illus. t.* 1119 B.

In moist woods.

Spores $8 \times 6 \mu$.

B. TEGINI. Stem rooting, distinctly *tubulose*, not fibrous, manifestly *cartilaginous*. Gills seceding, then free. Pileus thinner than in the former group, hygrophanous, even, or with the margin striate.

* *Stem woolly below, smooth upwards.*

1273. Marasmius prasiosmus. *Fries Hym. Eur.* 469.

Prasi-osmus = smelling like a leek, *πράσμον*.

Strong scented. Pileus rather membranaceous, tough, campanulate, then convex, flattened, obtuse, rugulose; stem fistulose, *pallid above, becoming smooth, incrassated downwards*, pale rufous or fuscous, somewhat *tomentose*; gills adnexed, a little crowded, at first white.—*Cooke Illus. t.* 1120.

Amongst leaves.

Spores $15 \times 8 \mu$.

1274. Marasmius varicosus. *Fries Hym. Eur.* 469.

Varico'sus = full of dilated veins.

Inodorous. Pileus rather fleshy, tough, campanulate, then plane, somewhat umbonate, *darker when dry*; stem fistulose, thin, smooth, *rusty, with a dark red juice, fulvous tomentose* at the base; gills seceding, then free, *much crowded, very narrow*, umber when dry.—*Cooke Illus. t.* 1121 A.

Amongst moss.

Spores $4 \times 3 \mu$.

1275. Marasmius fusco-purpureus. *Pers. Ic. & Desc. t.* 4, *f.* 1-3.

Fusco-purpur'eus = dusky purple.

Inodorous. Pileus rather fleshy, convexo-plane, sub-umbilicate, growing pale; stem fistulose, smooth, *without juice, brown-purple, base rubiginous, strigose*; gills annulato-adnexed, at length free, distant, rufescent.—*Cooke Illus. t.* 1121 B.

In woods, amongst leaves.

Spores $4 \times 3 \mu$.

1276. Marasmius terginus. *Fr. Hym. Eur.* 469.

Tergi'nus = made of hide or leather, *tergum*.

Inodorous. Pileus rather fleshy, convex, then plane, obtuse, *shining*, becoming whitish; stem fistulose, smooth above, shining, pallid, *reddish below, villous and rooting*; gills seceding, then free, rather crowded, narrow, pallid.—*Cooke Illus. t.* 1122 A.

Amongst leaves.

Pileus $\frac{5}{12}$ in. broad, pale reddish brown, darker in the centre; stem about 3 in. high, $\frac{1}{2}$ line thick, smooth, pale-brown, satiny; gills reddish-ochre, adnate by a tooth, but sinuated, moderately distant. Spores $6 \times 4 \mu$.

**** Stem (when dry) everywhere pruinose velvety.**

1277. Marasmius Wynnei. *B. & Br. Outl. t.* 19, *f.* 3.

Wynn'ei, in honour of Mrs. Lloyd Wynne, of Coed Coch.

Inodorous, caespitose. Pileus fleshy, convexo-plane, subumbonate, *lilac brown*, tardily changing colour; stem fistulose, of the same colour, *fuliginaceous*; gills thick, distant, adnexed, lilac.—*Cooke Illus. t.* 1123 A.

Amongst leaves, twigs, etc.

Spores $7-8 \times 4 \mu$.

1278. Marasmius erythropus. *Pers. Syn.* 367.

Eryth'ro-pus = red-stemmed.

Inodorous. Pileus rather fleshy, convexo-plane, then obtuse, even, turning pale, at length rugose; stem fistulose, striate, smooth, dark-red, somewhat pruinose when dry, base whitish, strigose; gills free, seceding, broad, lax, connected by veins, quite entire, whitish.—*Fries Hym. Eur.* 470. *Cooke Illus. t.* 1123 B.

Amongst leaves, near stumps.

Spores $10-11 \times 4-5 \mu$.

1279. Marasmius archyropus. *Pers. M.E. t.* 25, *f.* 4.

Archy'ropus = with a very long stem.

Inodorous. Pileus rather fleshy, convexo-plane or depressed, smooth, growing pale; stem stuffed, then hollow, rigid, straight, pallid, rufous beneath the white tomentose bark, base similar; gills adnexed, seceding, crowded, linear, pallid.—*Fr. Hym. Eur.* 471. *Cooke Illus. t.* 1122 B.

Amongst leaves.

Spores $4-5 \mu$.

1280. Marasmius torquescens. *Quelet Jura. t. 22, f. 3.*

Torquescens = inclined to twist (which it is, when dry).

Pileus membranaceous, thin, convexo-plane, *rugosely striate*, pallid, disc fulvous, stem rather filiform, *delicately velvety*, brown, *smooth above*, whitish; gills free, *thin*, ventricose, distant, white or reddish.—*Fr. Hym. Eur.* 471. *Cooke Illus. t.* 1124 A.

Amongst twigs.

Spores $5 \times 4 \mu$.

1281. Marasmius impudicus. *Fr. Hym. Eur.* 471.

Impudi'cus = shameless, disgusting. From its foetid odour.

Fœtid. Pileus rather fleshy, tough, convexo-plane, then depressed; margin at length striate and plicate, growing pale; stem fistulose, equal, purplish, *when dry everywhere velvety-white*, base naked, rooting; gills nearly free, ventricose, flesh-colour, then whitish.—*Cooke Illus. t.* 1124 B.

On and about pine trunks.

Spores $8 \times 4.5 \mu$.

C. CALOPODES. Stem short, not rooting, inserted, often with a floccose tubercle at the base. Pileus convex, involute, then plane and depressed, in which state the gills, typically adnate, are subdecurrent.

* *Stem quite smooth above, shining, base simple.*

1282. Marasmius scorodonius. *Fr. Hym. Eur.* 472.

Scorodon'ius, adj. from *σκόροδος* = garlic.

Strong-scented. Pileus somewhat fleshy, tough, even, soon plane, rugulose, and crisped; stem fistulose, equal, *quite smooth, shining, rufous*; gills *adnate*, crisp, whitish.—*Cooke Illus. t.* 1125 A.

Heaths and dry pastures.

Spores $6 \times 4 \mu$.

1283. Marasmius calopus. *Pers. Syn.* 373.

Calo'pus = with a beautiful stem.

Inodorous. Pileus rather fleshy, tough, convexo-plane, then depressed, even, at length rugose; stem fistulose, equal, *smooth*, not rooting, *shining, rufous bay*; gills *emarginate, adnexed*, thin, white.—*Fries Hym. Eur.* 472. *Cooke Illus. t.* 1125 B.

On twigs, grass roots, etc.

Spores $7 \times 4 \mu$.

1284. Marasmius Vaillantii. *Fr. Hym. Eur.* 472.

Vaillantii, in honour of M. Vaillant.

Inodorous. Pileus submembranaceous, tough, soon expanded, depressed, *plicato-rugose*, turning whitish; stem stuffed, smooth, bright brown, *thickened above and paler*; gills broad, adnate, sub-decurrent, thick, distant, white.—*Cooke Illus. t.* 1126 A.

On dead wood.

Spores $10 \times 6 \mu$.

1285. Marasmius angulatus. *Pers. Myc. Eur. t.* 26, *f.* 34.

Angulatus = angled.

Gregarious, small. Pileus between fleshy and membranaceous, at first hemispherical, then becoming plane, at length *angularly plicate*, whitish tawny; gills distant, paler; stem slender, thickened each way, greyish-rufescent.—*Fries Hym. Eur.* 473. *Cooke Illus. t.* 1126 B.

On grass.

Spores $7 \times 4 \mu$.

1286. Marasmius languidus. *Laseh. Linn. No.* 157.

Languidus = weak, limp.

Inodorous, whitish. Pileus somewhat fleshy, convex, gibbous, or umbilicate, *flocculose, rugoso-sulcate*; stem stuffed, incrassated upwards, pallid, naked, brownish downwards; gills adnate, then decurrent, distant, *narrow*, connected by veins.—*Fr. Hym. Eur.* 473. *Cooke Illus. t.* 1126 C.

On dead leaves of grass.

Spores 4.5μ .

****** *Stem velvety or pruinose, rather tuberculose at the base.*

1287. Marasmius foetidus. *Sow. Fungi t.* 21.

Foetidus = stinking.

Foetid. Pileus submembranaceous, tough, convex, then expanded and umbilicate, *striato-plicate*, turning pale when dry, subpruinose; stem *fistulose*, velvety or pruinose, bright brown, base flocculose; gills annulato-adnexed, distant, *rufous-yellow*.—*Fr. Hym. Eur.* 473. *Cooke Illus. t.* 1134 A.

On decayed twigs.

1288. Marasmius amadelphus. *Bull. Champ. t.* 550, *f.* 3.

Am'adelphus, from *ἄμα* = together, and *ἀδελφός* = a brother. From its growing in crowds, *catervatim*.

Inodorous. Pileus between fleshy and membranaceous, obtuse,

convex, then plane and depressed, *discoid*, *subpruinose*; margin at length *striate*; stem stuffed, short, pallid, bright brown below, rather mealy; gills broadly adnate, distant, broad, pallid.—*Fr. Hym. Eur.* 474. *Cooke Illus. t.* 1127 A.

On dead branches.

1289. Marasmius ramealis. *Bull. Champ. t.* 336.

Ramea'lis, from *ramus* = a branch.

Inodorous. Pileus somewhat fleshy, plane or depressed, obtuse, without *striae*, *rugulose*, opaque; stem stuffed, short, mealy, white, rufous below; gills adnate, rather distant, narrow, white.—*Fr. Hym. Eur.* 474. *Cooke Illus. t.* 1127 B.

On dry dead branches.

1290. Marasmius candidus. *Bolton t.* 39, *f. D.*

Candidus = bright white.

White. Pileus rather membranaceous, hemispherical, then plane or depressed, *pellucid*, *naked*, at length *sulcately rugulose*; stem stuffed, thin, incurved, delicately pruinose, base floccose and at length brownish; gills adnexed, ventricose, distant.—*Fr. Hym. Eur.* 474. *Cooke Illus. t.* 1127 C.

On twigs, etc.

Sect. II. MYCENA. Stem horny, fistulose, but here and there medullate, tough, dry. Mycelium rhizomorphoid, corticate, not floccose. Pileus submembranaceous, campanulate, then expanded, margin at first straight, and adpressed.

A. CHORDALES. Stem rigid, rooting, or dilated at the base. Pileus campanulate or convex.

1291. Marasmius alliaceus. *Jacq. Austr. t.* 82.

Allia'ceus, from *allium* = garlic.

Strong-scented. Pileus submembranaceous, campanulate, then expanded, subumbonate, at first even, then sulcate, growing pale; stem *horny*, *tall*, *rigid*, *velvety*, or *pruinose*, *black*; base rooting, naked; gills *free*, brownish white.—*Fr. Hym. Eur.* 475. *Cooke Illus. t.* 1128 A.

In woods.

Spores 16-18 × 10 μ.

1292. Marasmius caudicinalis. (*With.*) *Sow. t.* 163.

Caudicina'lis. Etymology obscure.

Pileus membranaceous, campanulato-convex, obtuse, smooth,

even, then striato-sulcate; stem *fistulose, flocculose, bay, attenuated above and paler, farinose*; gills *adnato-decurrent, connected by veins, yellow*.—*Fr. Hym. Eur.* 476. *Cooke Illus. t.* 1134 B.

On the ground, amongst leaves.

1293. Marasmius cohærens. *A. & S. Consp., p.* 163.

Cohærens = sticking together. From the connected gills.

Pileus rather fleshy, campanulate, then expanded, obsoletely umbonate, *velvety*, cinnamon-brown, growing pale; stem *horny*, very rigid, even, smooth, shining, bay, pallid above; gills *free*, distant, connected by slight veins, white, then yellowish, growing pallid.—*Fr. Hym. Eur.* 137. *Cooke Illus. t.* 1128 B.

On bramble.

Spores $12 \times 6 \mu$.

B. ROTULÆ. Stem filiform, flaccid, base inserted. Pileus soon becoming plane, or umbilicate. *Epiphyllous*.

* *Stem quite smooth, shining.*

1294. Marasmius rotula. (*Scop.*) *Fr. Hym. Eur.* 477.

Rot'ula = a little wheel.

Pileus membranaceous, slightly convex, umbilicate, plicate; stem *horny, fistulose, shining, quite smooth, blackish*; gills few, broad, distant, *attached to a free collar behind*, pallid, white.—*Sow. t.* 95. *Berk. Outl. t.* 14, *f.* 7. *Cooke Illus. t.* 1129 A.

On fallen twigs, &c.

Spores $6 \times 3-4 \mu$.

1295. Marasmius graminum. (*Libert.*) *Berk. Outl. t.* 14, *f.* 8.

Gram'inum, gen. pl. of *gramen* = grass.

Pileus nearly plane, *umbonate, sulcate*, very pale rufous, the furrows paler, umbo brown; stem quite smooth, shining, black, white above; gills few, sub-ventricose, cream-coloured, attached to a free collar.—*Fries Hym. Eur.* 477. *Cooke Illus. t.* 1129 B.

On leaves of grass.

Spores $3-4 \mu$.

1296. Marasmius androsaceus. *Linn. Suec. No.* 1193.

Androsaceus, from *ἀνδρόσακος* = an unidentified sea plant or zoophyte.

Pileus membranaceous, slightly convex, sub-umbilicate, striate, smooth; stem *horny, fistulose, quite smooth, black*; gills

adnate to the stem, *distinct, simple*, whitish.—*Bolt. t. 32. Sow. t. 94. Fr. Hym. Eur. 477. Cooke Illus. t. 1129 C.*

On leaves, &c., in woods.

Spores $7 \times 3-4 \mu$.

1297. Marasmius splachnoides. *Fr. Hym. Eur. 478.*

Splachno'ides = like the intestines, *σπλάγχνα*; from the anastomosing gills.

Inodorous. Pileus rather membranaceous, convex, then expanded and umbilicate, smooth, striate; stem horny, hollow, smooth, shining, *reddish* (brownish); gills somewhat decurrent, crowded, simple, and anastomosing, white.—*Cooke Illus. t. 1130 A.*

Amongst pine leaves.

Spores $8 \times 5 \mu$.

1298. Marasmius Curreyi. *B. & Br. Ann. N. H. 1795.*

Curreyi, in honour of F. Currey.

Pileus nearly plane, sulcate, pallid rufous, somewhat radiating, grooves paler, umbo tawny; stem quite smooth, shining, black, white at the apex; gills few, rather ventricose, cream-coloured, forming a collar, interstices veined, or quite smooth.—*Cooke Illus. t. 1130 B.*

On leaves of grass.

Spores $9 \times 5-6 \mu$.

**** Stem velvety or hairy.**

1299. Marasmius perforans. *Fr. Hym. Eur. 478.*

Per'forans = boring through; *i.e.*, piercing the fir leaves.

Fætid. Pileus sub-membranaceous, becoming *nearly plane without striae, rugulose*, smooth; stem fistulose, equal, *velvety*, dark-bay, inserted at the base; gills adnate, simple, whitish, frequently dimidiate.—*Cooke Illus. t. 1130 C.*

On fir leaves.

Spores $4 \times 3 \mu$.

1300. Marasmius insititius. *Fr. Hym. Eur. 478.*

Insitit'ius = inserted, ingrafted.

Inodorous. Pileus membranaceous, tough, convexo-plane, sub-umbilicate, unpolished, at length plicato-sulcate; stem horny, fistulose, *floccose or mealy*, reddish-brown, *attenuated downwards* to the simple inserted base; gills broadly adnate, attenuated in front, *distant, simple*, unequal, pallid, white.—*Berk. Outl. t. 14, f. 6. Cooke Illus. t. 1135 A.*

On leaves, decayed grass, &c.

1301. Marasmius Hudsoni. (Pers.) Fr. Hym. Eur. 478.

Hud'soni, in honour of Hudson, author of *Flora Anglica*.

Inodorous. Pileus membranaceous, hemispherical, rugulose; stem horny, filiform, dark purple, *beset—as well as the pileus—with scattered purple hairs*; gills adnexed, narrow, simple, white, alternately dimidiate.—*Sow. t. 164. Cooke Illus. t. 1135 B.*

On fallen holly leaves.

Spores $5 \times 3 \mu$.

1302. Marasmius epichlœ. Fr. Hym. Eur. 479.

Epi'chloe = upon the grass, $\chi\lambda\acute{o}\eta$.

Pileus thin, plano-convex, *somewhat papillate*, without striæ, whitish, centre bay-brown; stem bay, opaque, *sulcately striate*, *striæ setulose*, base paler; gills rounded, rather crowded, broader behind.—*Cooke Illus. t. 1136 A.*

On the base of grasses.

Spores $3 \times 2 \mu$.

1303. Marasmius actinophorus. B. & Br., *Ceylon Fungi* 385.

Actinoph'orus = bearing rays, like a scallop-shell.

Small. Pileus convex, umbilicate, bay brown, *radiately lined*, rugose when dry; stem hair-like, pallid; gills white.—*Cooke Illus. t. 1136 B.*

On twigs, &c.

1304. Marasmius saccharinus. Batsch. f. 83.

Sacchari'nus, from *sacchārum* = sugar; from the white pileus looking like lump-sugar.

Pileus membranaceous, *convex, sub-papillate, smooth, sulcate* and plicate; stem very thin, flocculose, becoming smooth, inserted obliquely, reddish, gills broadly adnate, narrow, thick, very distant, *connected by veins*, whitish.—*Fr. Hym. Eur. 479. Cooke Illus. t. 1136 C.*

On dead twigs.

Spores $5 \times 3 \mu$.

1305. Marasmius epiphyllus. Fr. Hym. Eur. 479.

Epiphyllus = growing on leaves.

Pileus membranaceous, nearly plane, at length umbilicate, smooth, plicato-rugose; stem rather horny, fistulose, *finely velvety*; bright brown below, inserted; gills adnate, *few, distant, entire, veined*, white.—*Sow. t. 93. Cooke Illus. t. 1137 A.*

On fallen leaves, twigs, &c.

Spores $3 \times 2 \mu$.

1306. Marasmius polyadelphus. *Lasch. in Linn. No. 208.*

Pol'y-adelphus, from *πολύς* = many, and *ἀδελφός* = a brother, From its growing in dense patches.

Minute, *snowy-white*, rather tough. Pileus very thin, *hemispherical*, sulcate, *flocculose*; stem tough, floccose at the base; gills decurrent, *almost fold-like*.—*Fr. Hym. Eur. p. 165. Cooke Illus. t. 1137 B.*

On dead leaves.

Spores $5 \times 3 \mu$.

III. *APUS*. Pileus sessile, resupinate.**1307. Marasmius spodoleucus.** *B. & Br., Ann. N. H., May, 1859.*

Spod'o-leucus = ashy-white; from *σποδός* = wood-ashes.

Conchiform, *resupinate*, margin at length free, cinereous above, pulverulent or slightly furfuraceous; stem wanting; gills few, white; interstices even.—*Fr. Hym. Eur. 480. Cooke Illus. t. 1137 C.*

On dead elm twigs.

There remains not the slightest doubt that *Marasmius Broomei*, Berk., Ann. Nat. Hist. 1795, is precisely the same species, described for a second time in error, from the very same specimens. Only one species is represented either in the Herbarium of Rev. M. J. Berkeley or in that of Mr. Broome.

GEN. 14. **LENTINUS.** *Fr. Ep. 45.*

Lenti'nus, from *lentus* = tough, lasting long.

Pileus fleshy, coriaceous, tough, when old, hard and dry; stem hard and often obsolete, when present continuous with the hymenophore; gills tough, simple, unequal, thin, edge acute, generally toothed; trama none.

I. *MESOPODES*. Pileus almost entire, stem distinct.

* *LEPIDEI*. *Pileus squamose, more or less manifestly veiled.*

1308. Lentinus tigrinus. *Fr. Hym. Eur. 481.*

Tigrinus = barred or spotted like a tiger.

Pileus fleshy-coriaceous, thin, orbicular, umbilicate, whitish, *clothed with innate black scales*; stem thin, without striæ, *squamulose*, with a decided veil; gills attenuated, decurrent, very narrow, white, then yellowish.—*Sow. t. 68. Cooke Illus t. 1138, 1139 A.*

On old stumps.

Pileus about 2 inches Stem 2 in. long.

1309. *Lentinus Dunalii*. *D. Cand. Fl. Fr.* v., 47.

Dunalii, in honour of M. Dunal.

Pileus fleshy-coriaceous, thin, umbilicate, irregular, pallid, clothed with adpressed spot-like scales; stem short, somewhat silky; gills decurrent, crowded, pallid.—*Fr. Hym. Eur.* 481. *Berk. Outl.* t. 15, f. 2. *Cooke Illus.* t. 1139 B.

On ash trees. Rare.

1310. *Lentinus lepideus*. *Fr. Hym. Eur.* 481.

Lepideus, from *λεπίς* = a scale.

Pileus fleshy, compact, tough, convex, then depressed, unequal, pallid-ochraceous, broken up into darker spot-like scales; stem stout, rooting, tomentose or scaly; gills sinuate, decurrent, broad, torn, transversely striate, whitish.—*Sow.* t. 382. *Cooke Illus.* t. 1140, 1141.

On stumps of firs, etc.

Pileus 2-4 inches. Stem very variable, often attenuated.

**** PULVERULENTI.** *Pileus villose, or pulverulent.*

1311. *Lentinus leontopodius*. *Schulz. Icon.* t. 28.

Leonto-podius = lion-footed; *λέων* = a lion.

Pileus between fleshy and coriaceous, tough, irregular, *delicately tomentose*, tan colour, disc depressed, margin deflexed and lobed, stem thick, woody, unpolished, powdery, pale chestnut, turning black below; gills decurrent, connected by veins, wrinkled at the sides, edge serrate.—*Fr. Hym. Eur.* 483. *Stevenson Hym. Britt.* ii., p. 155.

On old willow.

1312. *Lentinus pulverulentus*. *Fr. Hym. Eur.* 483.

Pulverulentus = dusty.

Pileus fleshy, scarcely convex, yellow; stem stout, elongated, equal, rigid, powdered with whitish mealy particles; gills denticulate, white.—*B. & Br. Ann. N.H.* No. 1567.

On trunks.

Tufted, at first infundibuliform, then lateral flabelliform, fuliginous, floccoso pulverulent, with little umber particles; stem elongated, at length smooth; gills thick, pallid, deeply decurrent, their edge crenulate, but not torn; pileus 2 in.; stem 3 in. high.

1313. *Lentinus resinaceus*. Trog. Flora, 1832, p. 525.

Resinaceus = like resin.

Pileus somewhat fleshy, slightly excentric, *villous*, rather gummy, ochraceous cinnamon, stem unequal, tomentose, gills crowded, serrated, whitish.—*Fr. Hym. Eur.* 483.

On trunks.

1314. *Lentinus adhærens*. Alb. & Schw. Consp. p. 186.

Adhærens = sticking to, adhesive,

Pileus somewhat fleshy, tough, irregular, lacunose, subpulverulent, dingy, pallid, glutinous, laccate, as well as the nearly hollow-rooting stem; gills decurrent, forming lines on the stem, very thin, torn, white.—*Fr. Hym. Eur.* 483.

In pine-woods.

* * * COCHLEATÆ. *Pileus smooth*.

1315. *Lentinus cochleatus*. Fr. Hym. Eur. 484.

Cochleatus = spiral-formed, like a snail-shell (*cochlea*).

Annual, tough, *flaccid*. Pileus fleshy, but tough, irregular, somewhat lobed or contorted, *rufescent*, as well as the solid, firm, *sulcate*, *smooth* stem; gills crowded, serrated, pinkish-white.—*Sow. t.* 168. *Berk. Outl. t.* 19, *f.* 4. *Cooke Illus. t.* 1142 A.

On trunks and the ground.

With a faint odour of Anise. Pileus 2-3 in. diam.

II. PLEUROTII. Dimidiate, sessile, or with a lateral stem.

1316. *Lentinus scoticus*. B. & Br. Ann. N.H. No. 1423.

Scoticus = Scotch.

Inodorous. Pileus smooth, hygrophanous, extremely variable, *pallid*, at length brownish, either quite stemless and *reniform*, or variously stipitate, solitary or cæspitose, sometimes deeply umbilicate, lobed at the margin, and sinuate or plicate, gills rather distant, strongly toothed, decurrent when the stem is developed.—*Fr. Hym. Eur. p.* 485. *Cooke Illus. t.* 1143.

On decayed *Ulex* and rotten wood.

Pileus $\frac{1}{2}$ -1 $\frac{1}{2}$ in. broad, stem when present varying from 2 lines to as many inches.

1317. *Lentinus fimbriatus*. Curr. Linn. Trans. XXIV., p. 152, t. 25, f. 2.

Fimbriatus = fringed.

Pileus subdimidiate, subcoriaceous, depressed, *fawn coloured*, covered with darker floccose scales; margin slightly involute,

somewhat strigose; stem lateral, squamulose; gills serrated and torn, descending (not decurrent), pale brown.—Cooke Illus. t. 1148 A.

On a stump standing in a pond.

1318. *Lentinus vulpinus.* Fr. Hym. Eur. 486.

Vulpi'nus, from *vulpes* = a fox.

Sessile, imbricated. Pileus fleshy, but tough, *conchate*, connate behind, longitudinally rough, *costate*, *corrugate*, or *floccose*, *taw-coloured*; margin incurved, entire; gills torn, white.—*Sow. t. 361. Cooke Illus. t. 1142 B.*

On stumps.

Pileus up to 3 in. diam.

1319. *Lentinus flabelliformis.* Bolton Fungi t. 157.

Flabell'iformis = like a fan in shape.

Subsessile. Pileus thin, tough, kidney-shaped, plane, smooth, *tawn-coloured*; margin crenato-fimbriate; gills broad, torn, pallid.—*Fr. Hym. Eur. 487. Cooke Illus. t. 1148 B.*

On stumps.

Pileus scarcely exceeding 1 in.

GEN. 15. **PANUS.** Fr. *Epicr. p. 396.*

Pa'nus = swelling. Etymology obscure.

Whole fungus between fleshy and leathery, tough, but not woody, drying up, but reviving with moisture; gills thinner than in *Lentinus*, tough, at length coriaceous, unequal, *with an entire acute edge*; trama floccose.

* *Pileus irregular, stem excentric.*

1320. *Panus conchatus.* Fr. Hym. Eur. 488.

Concha'tus = shell-shaped.

Pileus fleshy, tough, thin, unequal, excentric and dimidiate, *cinnamon*, *becoming pale*, *at length squamulose*; stem short, unequal, pubescent at the base; gills forming decurrent lines on the stem, somewhat branched, whitish, flesh-coloured, then ochraceous. *Cooke Illus. t. 1149 A.*

On trunks.

Pileus 2-4 in. Stem $\frac{1}{2}$ in. long.

1321. Panus torulosus. *Fr. Hym. Eur.* 489.

Torulo'sus, from *torulus* = a tuft of hair.

Pileus fleshy, then tough, coriaceous, plane, then infundibuliform or dimidiate, *even, flesh-coloured or ochraceous*; stem short, oblique, *clothed with grey down*; gills decurrent, rather distant, distinct behind, ruddy, then tan-coloured.—*Bolt. t.* 146. *Cooke Illus. t.* 1149 B.

On old stumps.

Pileus 2-3 in. diam.

** *Stem definitely lateral.*

1322. Panus stypticus. *Fr. Hym. Eur.* 489.

Stypticus = astringent, styptic.

Pileus coriaceous, reniform, cinnamon, growing pale, cuticle *breaking up into mealy scales*; stem lateral, short, dilated above; gills determinate, thin, crowded, *connected by veins*, cinnamon.—*Sow. t.* 109. *Cooke Illus. t.* 1144 A.

On stumps, dead trees, etc. Common.

Pileus $\frac{1}{2}$ -1 in. broad.

1323. Panus farinaceus. *Schum. Fr. Hym. Eur.* 490.

var. *albido-tomentosus.* *Cke. & Mass.*

Farina'ceus = mealy.

Pileus subcoriaceous, flexuous, pallid umber, densely clothed with a short whitish *velvety tomentum*, which seems to be persistent, but thinner and shorter towards the incurved margin; stem lateral, or without any distinct stem, but attached by a villous base; gills radiating, attenuated behind, lanceolate, honey-coloured, entire, rigid, scarcely crowded, mixed with shorter ones; spores sub-globose ($5\ \mu$ diam.).—*Cooke Illus. t.* 1144 B.

On trunks.

Pileus about an inch broad, often in imbricated tufts. It is doubtful whether this is not a distinct species from the type described by Fries.

* * *Pileus resupinate.*

1324. Panus patellaris. *Fr. Hym. Eur.* 490.

Patellar'is = like a little dish.

Resupinate, coriaceous, plane or cup-shaped, orbicular, externally pallid, *furfuraceous*, adnate by the scarcely porrect vertex, margin involute, gills concurrent, dingy ochre, somewhat crowded, entire. Spores oval ($6 \times 4\ \mu$).—*Cooke Illus. t.* 1144 C.

On branches of cherry.

In some respects very similar to *P. ringens*, but differs in the distinctly mealy pileus, and the smooth, not triate, margin. Pileus $\frac{1}{2}$ inch or a little more.

1325. Panus Stevensonii. *B. & Br. Ann. Nat. Hist. No. 1796.*

Stevensonii, in honour of the Rev. J. Stevenson, of Glamis.

Pileus spathulate, olive yellow, stem dilated above, convex, golden, slightly hispid; gills narrow, entire, flesh greenish yellow.

On oak.

GEN. 16 **XEROTUS.** *Fr. Ep. p. 48.*

Xerotus, from ξηρός = dry, and οὖς = an ear.

Hymenophore continuous with the stem, descending in a similar trama into the coriaceous pileus. Gills coriaceous, fold-like, dichotomous, with the edge entire and obtuse.

1326. Xerotus degener. *Fr. Hym. Eur. 491.*

De'gener = ignoble, degenerate.

Pallid. Pileus between coriaceous and membranaceous, very tough, plano-depressed, flocculose, hygrophanous, *striate when moist*, bay, somewhat zoned; stem fistulose, rigid, *black*; gills plicate, branched, distant, pallid, rufous.—*Sow. t. 210. Cooke Illus. t. 1150 B.*

In peat mosses.

GEN. 17. **TROGIA.** *Fr. Mon. Hym.*

Trogia, in honour of the Swiss botanist, Trog.

Pileus submembranaceous, soft, tough, flaccid; gills venose, fold-like, forked, edge longitudinally channelled or crisped.

1327. Trogia crispa. *Fr. Hym. Eur. 492.*

Crispa = crisp, curled.

Tough, cup-shaped, reflexed, lobed, villous, reddish-yellow; gills plaited, *dichotomous, crisp*, whitish or grey.—*Cooke Illus. t. 1114 A.*

On twigs of beech, birch, etc.

Pileus $\frac{1}{2}$ -1 in. broad. Spores globose 4-5 μ .

GEN. 18. **SCHIZOPHYLLUM.** *Fr. Obs. 1. p. 103.*

Schizophyllum = with the leaf split (σχίζω = I split).

Pileus not fleshy, dry, sessile; gills coriaceous, branched, split longitudinally at the edge, with the two divisions revolute or spreading, joined to the pileus by a tomentose pellicle.

1328. Schizophyllum commune. *Fr. Hym. Eur. 492.*

Commune = common.

Pileus adnate behind, somewhat extended, simple and lobed;

gills grey, then brownish, purple, villous, edge revolute.—*Grev. t. 61. Sow. t. 183. Cooke Illus. t. 1114 B.*

On dead wood.

Cosmopolitan. Scarcely exceeding an inch in diameter. Spores $6 \times 4 \mu$.

GEN. 19. **LENZITES.** *Fr. Gen. Hymen.*

Lenzites, in honour of the German botanist, Lenz.

Pileus corky, coriaceous, dimidiate, sessile; gills coriaceous, firm, unequal, simple, or branched, and anastomosing behind, edge obtuse or acute; trama floccose; often spuriously porous.

1329. Lenzites betulina. *Linn. Suec. No. 1214.*

Betulina = of or belonging to the birch, *betula*.

Pileus between corky and coriaceous, firm, *obsoletely zoned*, tomentose, pallid; margin of the same colour; gills straight, somewhat branched, anastomosing, pallid.—*Fr. Hym. Eur. 493. Sow. t. 182. Berk. Outl. t. 15, f. 3. Cooke Illus. t. 1145 A.*

On stumps, etc.

Pileus 1.2 in., or more, broad.

1330. Lenzites flaccida. *Bull. Champ. t. 394.*

Flaccida = limp, flaccid.

Pileus coriaceous, thin, *flaccid*, unequal, *hairy*, *zoned*, *pallid*; margin of the same colour; gills broad, crowded, straight, unequal and branched, white, becoming pallid.—*Fr. Hym. Eur. 493. Bolt. t. 158. Cooke Illus. t. 1145 B.*

On stumps.

1331. Lenzites sepiaria. *Fr. Hym. Eur. 494.*

Sepiaria, from *sæpes* = a hedge or fence.

Pileus coriaceous, hard, *zoned*, *strigoso-tomentose*, *rough*, *bright-brown*; margin yellowish; gills rather thick, branched, anastomosing, *yellowish*.—*Sow. t. 418. Cooke Illus. t. 1146 A.*

On fir wood.

1332. Lenzites abietina. *Fr. Hym. Eur. 495.*

Abietina, from *abies* = a fir-tree.

Pileus coriaceous, thin, *effuso-reflexed*, clothed with *umber down*, at length becoming smooth and whitish; gills decurrent, simple, unequal, *pruinose or glaucescent*, brownish.—*Cooke Illus. t. 1146 B.*

On deals.

Softer and thinner than *L. sepiaria*.

AUSTRALIAN FUNGI.

By M. C. COOKE.

(With Plates.)

HYMENOMYCETES.

ORDER 1. AGARICINI, Fr.

Hymenium inferior, spread over radiating gills.

GENUS 1. **AGARICUS**, Linn.

Gills membranaceous, persistent, with an acute edge, trama floccose.

Sect. A. *Leucospori*. White spored.

Sub-Genus 1. **AMANITA**, Pers. Universal veil free from the cuticle; stem distinct from the hymenophore, furnished with a volva at the base. Gills free.

a. Volva splitting at the apex, border free, persistent.

1. **Agaricus (Amanita) Preissii**, Fr. *Fl. Preiss* p. 131. *Sacc. Syll.* No. 4.

Pileus fleshy, convex then expanded, viscid, margin even; stem stuffed, furfuraceous, pallid, volva turnip-shaped, rooting, constricted at the apex, with a persistent free border; ring near the apex reflexed; gills adnate, crowded.

In sandy soil, woods, etc. W. Australia.

2. **Agaricus (Amanita) vernus**, Bull. *Cooke Illus.* t. 3.

In woods. Lower Murray River.

3. **Agaricus (Amanita) murinus**, Cke. & Mass. *Grev.* XVIII., 1.

Pileus campanulate, then expanded, obtusely umbonate, shining, mouse coloured, nearly naked, margin slightly striate ($1\frac{1}{2}$ -2 in.), stem thin, straight ($3 \times \frac{1}{2}$ in.), whitish, a little fibrillose below, ring pendulous. Volva bulbous, lax, gills free, rather crowded, white, or slightly tinted with rose. Spores $7 \times 5 \mu$. (Plate 1.)

On sandy soil. Queensland.

b. Volva definitely cut round, base marginate, persistent.

4. **Agaricus (Amanita) muscarius**, Linn. *Cooke Illus. t. 117.*
var. *puellaris*, Fries.

On the ground. Victoria.

5. **Agaricus (Amanita) ananiceps**, Berk. Hook. *Journ. VIII., 572.*
Sacc. Syll. No. 36.

Pileus broad, convex, smooth, shining (3-4 in.), breaking into areolæ at the centre, each bearing a conical wart, margin even, but the volva appendiculate; stem elongated, with a marginate bulb, and thickened near the gills; gills ventricose, attenuated behind, veil soon obliterated. Spores globose, muriculate, 8 μ diam.

On the ground. Tasmania, Endeavour River.

c. Volva entirely friable.

6. **Agaricus (Amanita) spissus**, Fr. *Hym. Eur. 23.* *Cooke Illus. t. 69.*

In woods. Lake Bonney.

Sub-Genus 2. AMANITOPSIS, Roze. Stem volvate, but without a ring.

7. **Agaricus (Amanitopsis) vaginatus**, Bull. *Cooke Illus. t. 12.*
On the ground in woods. N.S. Wales, Queensland.

8. **Agaricus (Amanitopsis) illudens**, Cke. & Mass. *Grav. XVI., p. 30.*

Pileus convex (1 in. diam.), ochraceous yellow, clad with scattered, broad, unequal warts, which soon fall away; margin even, stem slender, fistulose equal (2 in. long, 2-3 lines thick), ring obsolete, volva sheathing, gills free, attenuated behind, white, edge serrulate, spores oval, 8 \times 6 μ . (*Plate 2, Fig. A.*)

On the ground. Victoria.

9. **Agaricus (Amanitopsis) farinaceus**, Cke. & Mass. *Grav. XVIII., 1.*

White, wholly mealy. Pileus fleshy, convex, then flattened (2½-3 in.), whitish, sprinkled with erect prominent warts, chiefly at the disc, margin thin, veil adnate, fimbriate; stem equal (3-4 \times ½ in.) without ring, stuffed, white; volva bulbous, with the free margin crisped. Gills free, rather broad, crowded, white, then yellowish. Spores globose, 10 μ . (*Plate 2, Fig. B.*)

On the ground. Queensland.

10. Agaricus (Amanitopsis) curtus, Cke. & Mass. Grev. XVII., 72.

Pileus convex, then flattened, ochraceous white, even, smooth (2-2½ in. diam.), veil appendiculate at the margin; stem short (1 in. or less long), solid, bulbous, brick red, smooth, volva broad, circumscissile, marginate, fibrillose rooting at the base; gills free, remote, rather distant, narrow, white; spores elliptical, 19-22 × 10 μ. (Plate 3, Fig. A.)

On the ground. Victoria.

11. Agaricus (Amanitopsis) pulchellus, Cke. & Mass. Grev. XVIII., 1.

Pileus convex, then expanded (1-2 in.), vermilion, clad with irregular deciduous whitish warts, margin saffron-yellow, faintly striate, stem soon hollow, white (2-2½ in. × ¼ in.), volva adnate, marginate, base ovate, bulbous, ring obsolete, gills free, ventricose, crowded, white, at length tinged with yellow. Spores subglobose, 7-8 μ. (Plate 3, Fig. B.)

On the ground. Victoria.

Sub-Genus 3. LEPIOTA, Fr. Universal veil concrete with the pileus, gills free, often remote. Volva absent. Stem generally distinct from the hymenophore.

* *Epidermis dry.*

a. PROCERI. *Ring movable.*

12. Agaricus (Lepiota) procerus, Scop. Cooke Illus. t. 21.

On the ground, in pastures, etc. Victoria, Queensland, N.S. Wales, Tasmania.

13. Agaricus (Lepiota) excoriatus, Schff. Cooke Illus. t. 23.

On grassy ground. Victoria, Queensland, N.S. Wales, W. Australia, Port Jackson.

14. Agaricus (Lepiota) mastoideus, Fries. Cooke Illus. t. 24.

On the ground, in woods. Gipps' Land, Barossa Range.

15. Agaricus (Lepiota) dolichaulus, Berk. & Br. Linn. Trans. XXVII., p. 150.

Pileus fleshy, expanded, umbonate, centre smooth, otherwise punctately squamulose, margin torn and appendiculate, flesh white, unchangeable; stem elongated, straight, nearly equal, except at the base, where it is bulbous; apex penetrating, flocculose punctate, hollow, ring broad, deflexed and torn; gills broad, ventricose, very remote. (Plate 4.)

On the ground. Queensland.

- 16. Agaricus (Lepiota) lepidophorus**, Berk. & Br. *Ceylon Fungi* p. 498. *Sacc. Syll. No.* 170.

Pileus campanulate, papillately umbonate, then plane, rather fleshy, obtuse, white, sprinkled with minute reddish scales, stem attenuated upwards, stuffed, ring movable; gills ventricose, approximating to the stem, lemon-yellow. Spores 8μ long.

On the ground. N.S. Wales.

- 17. Agaricus (Lepiota) rhytipelta**, Müell. *Linn. Soc., N.S.W.*, 1882, p. 104.

Pileus fleshy, ovate-campanulate ($1-1\frac{1}{2}$ in. diam.), at first umber, smooth at the umbo, then around the periphery breaking up into thick scales, otherwise silky—striate and white; stem nearly equal (3-4 in. long, 2-3 lines thick), dilated and rather bulbous at the base, smooth, white, turning brownish downwards; ring movable, membranaceous, persistent; gills ventricose, broad, rather crowded.

On the ground. Lake Muir, Muelersville, and Western Port.

- 18. Agaricus (Lepiota) ochrophyllus**, Cke. & Mass. *Grev.* XVIII., 2.

Pileus fleshy, convex, then flattened, obtuse, pale ochre, variegated with darker concentrical innate scales (4-6 in. broad), margin faintly striate; stem solid, erect, smooth, at length striate, fibrillose (7 in. long, 1 in. thick), bulbous and turbinate at the base, of the same colour; ring superior, pendulous, sometimes double; gills broad, attenuated behind, free, rather crowded, ochraceous. Spores elliptical, $12 \times 8\mu$. (Plate 5.)

On sandy ground. Brisbane.

- b. CLYPEOLARIUM.* Ring fixed, homogeneous, with universal veil clothing the stem.

- 19. Agaricus (Lepiota) clypeolarius**, Bull. *Cke. Illus. t.* 38.

In woods. Queensland, Lake Bonney.

- 20. Agaricus (Lepiota) Beckleri**, Berk. *Linn. Journ.* XIII., p. 156.

Pileus subglobose or campanulate, umbonate, spongy, tomentose, rough about the apex with little scales; stem long, very minutely warted, becoming smooth, equal, with a tuberos root, ring broad, deflexed; gills broad, ventricose, attenuated behind. Spores $14 \times 8\mu$, sometimes $16 \times 10\mu$. (Plate 6, Fig. A.)

On the ground in scorched places. N.S. Wales.

- 21. Agaricus (Lepiota) stenophyllus**, Cke. & Mass. *Grev.* XV., 98.

Pileus fleshy, soft, hemispherical, then plane, the brownish cuticle broken into depressed scales, margin incurved (about $1\frac{1}{2}$ in. broad).

Stem long (5 in. long, $\frac{1}{4}$ in. thick above, twice as thick at the base), bulbous, fistulose, smooth, whitish; superior ring, deciduous. Gills linear, free, very narrow, white. Spores elliptical, $12 \times 7-8 \mu$. (Plate 6, Fig. B.)

On the ground. Mount Wellington, Queensland.

22. Agaricus (Lepiota) subclypeolarius, Berk. & Curt. Journ. Linn. Soc. x., 283. Sacc. Syll. No. 237.

Pileus oval, then plane, thin, radiately striate, floccose squamose, white, umbo dusky; stem nearly equal, smooth, white, with a median ring; gills distant, free, remote from the stem. Spores elliptical, 8μ long. (Plate 7, Fig. A.)

On the ground. Victoria.

23. Agaricus (Lepiota) fimetarius, Cke. & Mass. Grev. XVIII., 1.

Pileus fleshy, thin, campanulate, obtusely umbonate ($\frac{1}{2}-\frac{3}{4}$ in. broad), pallid, floccose, ornamented with darker adnate floccose scales. Stem (1-2 in. long) slender, nearly equal, squamulose below; ring fugacious; gills free, lanceolate, crowded, white. Spores ovate, apiculate, $7 \times 5 \mu$.

On dung. Brisbane.

24. Agaricus (Lepiota) cristatus, Alb. & Schw. Cooke Illus. t. 29.
In fields, pastures, &c. Tasmania.

c. ANNULOSI. Ring superior, fixed, subpersistent. Universal veil adnate to the pileus.

25. Agaricus (Lepiota) rhizobolus, Berk. Hook. Journ. (1845), p. 42. Sacc. Syll. No. 119.

Pileus convex, fleshy, shining, white, centre ornamented with pyramidal wart-like scales; veil marginal; stem smooth, short, bulbous; gills rather broad, free.

On the ground. West Australia.

26. Agaricus (Lepiota) naucinus, Fries. Cooke Illus. t. 15.

var. **sphaerosporus**, C. & Mass. in Grev.

On the ground. Brisbane.

27. Agaricus (Lepiota) bubalinus, Berk. Linn. Journ. XIII., p. 156. Sacc. Syll. No. 243.

Snowy white; pileus ovate or somewhat hemispherical, then expanded, broadly umbonate; stem thickened downwards, and tomentose; gills narrow. Spores $7-8 \times 5 \mu$. (Plate 8.)

On cow dung, &c. West Australia, Victoria.

- 28. Agaricus (Lepiota) cheimonoceps**, Berk. & Curt. *Cuban Fungi* p. 283. *Sacc. Syll. No. 236.*

Snowy white; pileus thin, pulverulent, here and there appendiculate; stem thickened downwards, furfuraceous, ring torn; gills remote, rather broad.

On trunks. Queensland.

- 29. Agaricus (Lepiota) leontoderes**, Berk. & Br. *Ceylon Fungi* 499. *Sacc. Syll. No. 234.*

Pileus convex, umbonate, tawny, clad with a few pallid warts; stem attenuated upwards from the truncate base, spotted, stuffed, then hollow; ring descending, torn, fugacious; gills broad, rounded behind, approaching the stem, paler. Spores $8\ \mu$ long. (*Plate 7, Fig. B.*)

On the ground. Queensland.

- 30. Agaricus (Lepiota) obclavatus**, Cke. & Mass. *Grev. xvi.*, 30.

Pileus rather fleshy, convex then plane, scarcely umbonate, furfuraceous, rufous, with a tawny tinge, disc darker, flesh reddish (1 in. diam); stem slender, cylindrical, fistulose, abruptly thickened and bulbous at the base (3-4 in. long, $\frac{1}{2}$ in. thick at the base), smooth, flesh-colour, darker below; ring thin, fugacious; gills crowded, narrow, free, white. Spores elliptical, hyaline, $10-12 \times 6\ \mu$. (*Plate 9, Fig. A.*)

On charred ground under *Eucalyptus*. Victoria.

d. GRANULOSI.—*Universal veil of the pileus and stem at first continuous, by rupture forming an inferior ring.*

- 31. Agaricus (Lepiota) granulatus**, Batsch. *Cooke Illus. t. 18.*

On the ground, on heaths, etc. Victoria, Queensland.

- 32. Agaricus (Lepiota) aspratus**, Berk. *Hook. Journ. 1847, p. 481.* *Sacc. Syll., No. 150.*

Pileus hemispherical, at length depressed, pallid yellow, often deep orange, rough, with warts composed of fasciculate flocci; stem nearly equal, floccosely scaly; gills adnexed, white. Spores $8-10\ \mu$ long. *Agaricus (Lepiota) echinodermatus*, Cke. & Mass. *Grev. xvi.*, 30. (*Plate 9, Fig. B.*)

On the ground, or on trunks. N.S. Wales, Queensland, New Caledonia.

e. MESOMORPHI.—*Small, slender; stem fistulose; pileus dry; cuticle entire.*

- 33. Agaricus (Lepiota) mesomorphus**, Bull. *Cooke Illus. t. 85, B.*

On the ground. Victoria.

- 34. Agaricus (*Lepiota*) rhyparophorus**, Berk. & Br. *Ceylon Fungi* p. 500. *Sacc. Syll. No.* 204.

Small; pileus convex, somewhat umbonate sulcate-striate, white, marked with brownish spots; stem clavate, ring descending; gills narrow, attenuated behind, approaching the stem. Spores oblong, $5\ \mu$ long. (*Plate 10, Fig. A.*)

On the ground. N.S. Wales.

- 35. Agaricus (*Lepiota*) lavendulæ**, Cke. & Mass. *Grev. xvi.*, 72.
= *Ag. columbicolor*, Cke. & Mass. *Grev. xvi.*, p. 30.

Pileus rather fleshy, convex, obtusely umbonate, furfuraceous, greyish-blue, or dove-colour ($\frac{3}{4}$ in. diam.); stem cylindrical, equal, whitish, ochraceous below, thin, stuffed, then hollow, smooth (2 in. long, 2 lines thick). Spores elliptical, $10-12 \times 5-6\ \mu$. (*Plate 10, Fig. B.*)

On the ground. Victoria.

*** Epidermis viscid.*

- 36. Agaricus (*Lepiota*) australius**, Fr. *Pl. Preiss* p. 131. *Sacc. Syll.*, No. 258.

Large; pileus slightly fleshy, campanulate, then expanded, obtuse, smooth, viscid; stem long, clavate downwards; ring superior, fixed, torn; gills very remote from the stem, thin, crowded, dusky.

On sandy soil. W. Australia.

With the habit of *A. procerus*, but the pileus viscid.

Species ignotis.

- 37. Agaricus (*Lepiota*) megalotheles**, Kalch. in *Syn. Queensl. Fl.*

Nomen nuda.

Sub-Genus 4. SCHULZERIA, Bres. Hymenophore distinct from the stem, without volva or ring. Equal to *Lepiota* without a ring.

- 38. Agaricus (*Schulzeria*) revocans**, Cke. & Mass. *Grev. xviii.*, 2.

Pileus somewhat fleshy, convex, flattened ($2-2\frac{1}{2}$ in. diam), soft, pallid, spotted chiefly about the disc with darker scales; margin thin, stem sub-bulbous, erect, without ring, brownish below, whitish above, smooth, at length hollow ($3 \times \frac{1}{4}$ in.); gills free, lanceolate, rather broad, white. Spores $6 \times 4\ \mu$. (*Plate 10, Fig. C.*)

In gardens. Brisbane.

EXPLANATION OF THE PLATES.

PLATE 1.—**Agaricus (Amanita) murinus**, *C. & M.*

Figured from original drawing sent with the specimens.

PLATE 2, Fig. A.—**Agaricus (Amanitopsis) illudens**, *C. & M.*

Figured from the specimens sent with notes.

PLATE 2, Fig. B.—**Agaricus (Amanitopsis) farinaceus**, *C. & M.*

Figured from original sketch sent with the specimens.

PLATE 3, Fig. A.—**Agaricus (Amanitopsis) curtus**, *C. & M.*

Figured from the specimens sent with notes.

PLATE 3, Fig. B.—**Agaricus (Amanitopsis) pulchellus**, *C. & M.*

Figured from the specimens sent with notes.

PLATE 4.—**Agaricus (Lepiota) dolichaulus**, *B. & Br.*

First described from Ceylon with original drawing, represented on the plate with section from very large Queensland specimen.

PLATE 5.—**Agaricus (Lepiota) ochrophyllus**, *C. & M.*

Figured from original sketches sent with the specimens.

PLATE 6, Fig. A.—**Agaricus (Lepiota) Beckleri**, *B.*

Figured from the original specimens and notes.

PLATE 6, Fig. B.—**Agaricus (Lepiota) stenophyllus**, *C. & M.*

Figured from the original specimens, accompanied by notes.

PLATE 7, Fig. A.—**Agaricus (Lepiota) subclypeolaris**, *B. & Br.*

Also first described from Ceylon, and now figured from original drawing, made from the living plant.

PLATE 7, Fig. B.—**Agaricus (Lepiota) leontoderes**, *B. & Br.*

Another Ceylon species, figured from the original drawing.

PLATE 8.—**Agaricus (Lepiota) bubalinus**, *Berk.*

Figs. A and C from original drawings made by Mr. Tisdall. Fig. B from the original specimens in Herb. Berkeley.

PLATES 1 to 4 are issued with the present number, and Plates 5 to 8 will be issued with the next.



AGARICUS (AMANITA) MURINUS. C. & M.

on sandy soil Brisbane

A

G.M.

 $8 \times 6 \mu$

AGARICUS (*AMANITOPSIS*) ILLUDENS. C. & M.
on the ground. Upper Yarra, Victoria.

B

 10μ

F.M.B.

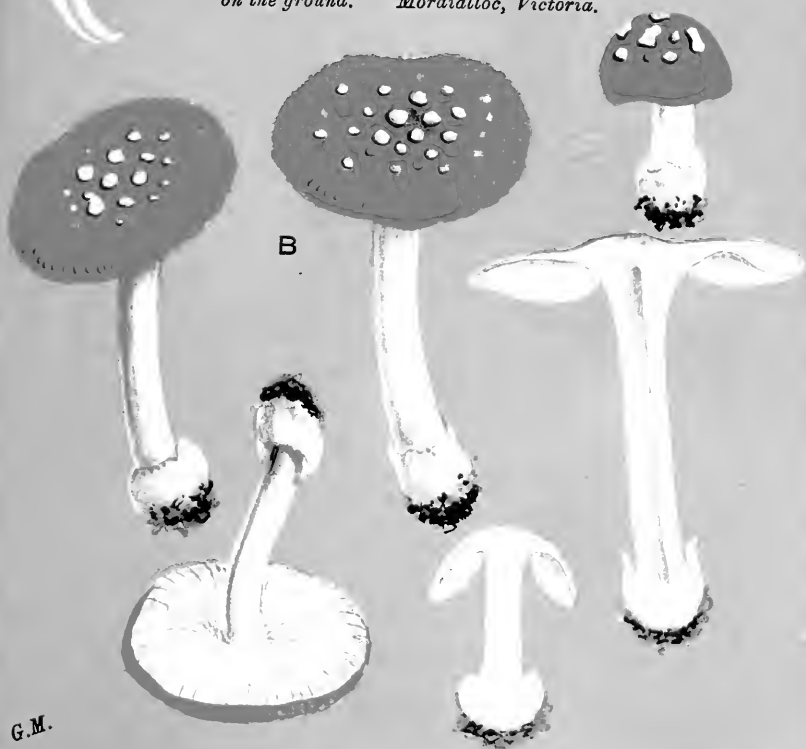
AGARICUS (*AMANITOPSIS*) FARINACEUS. C. & M.
on the ground. Brisbane

A

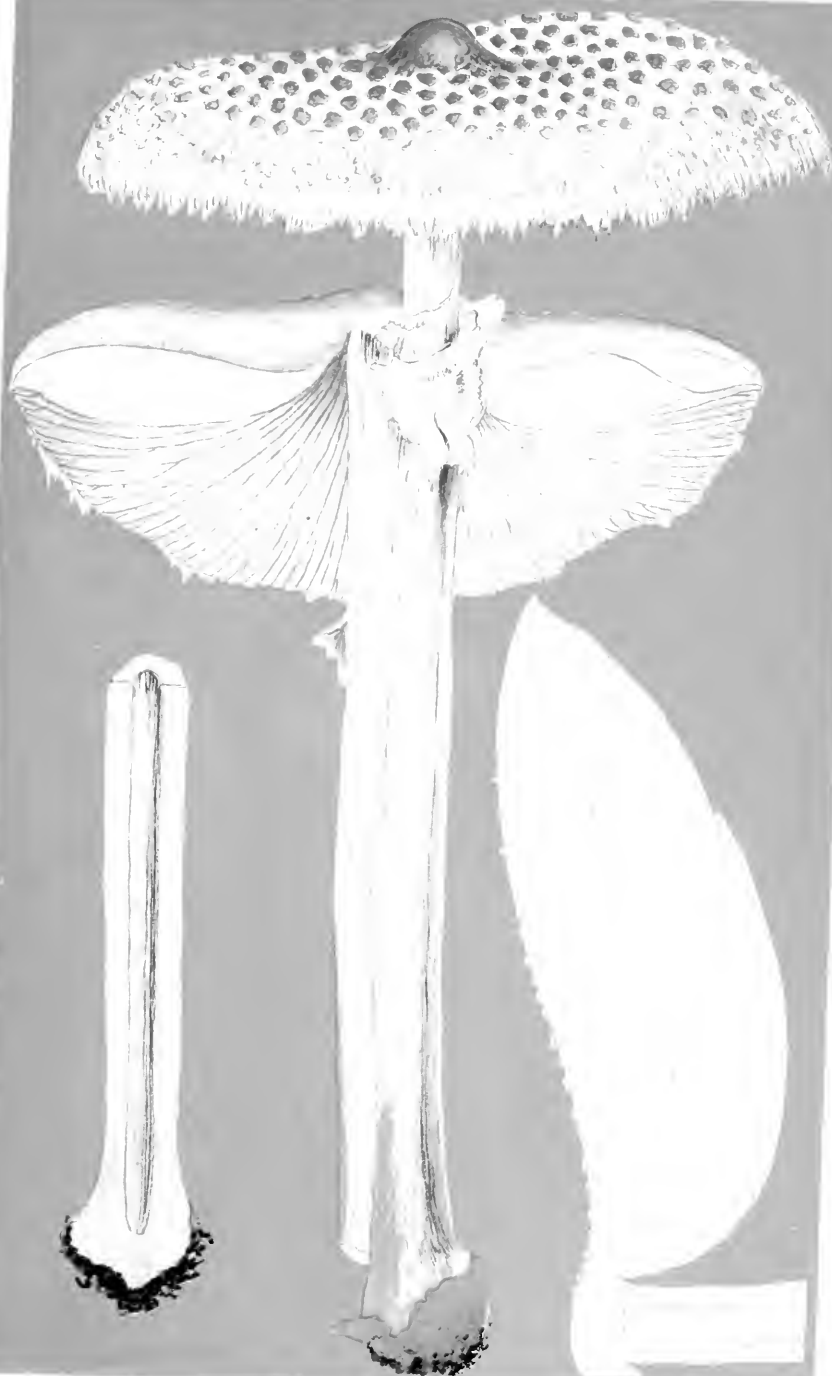


AGARICUS (*AMANITOPSIS*) CURTUS. C. & M.
on the ground. Mordialloc, Victoria.

B



AGARICUS (*AMANITOPSIS*) PULCHELLUS. C. & M.
on the ground, Domain, Victoria.



AGARICUS (LEPIOTA) DOLICHAULOS. *B. & Br.*

on the ground Queensland

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Die Abbildungen sind theils nach der Natur, theils nach den besten Originalen (Berkeley, Kalchbrenner, Fries, Krombholz, Batsch, Schaeffer u. A.) ausgeführt, incorporirt ist die Iconographie von Gillet. — Das Ganze, in 9 Bden. systemat. geordnet, bildet ein fast vollständiges iconographisches Repertorium der bisher bekannten europ. Hymenomyceten, und somit ein umfangreiches und bequemes Hilfs- und Nachschlagebuch für Hymenomyceten-Forscher, wie in ähnlicher Vollständigkeit ein zweites nicht existirt. 280

— Hymenomyceten aus Südbayern: Die sämmtlichen Originalzeichnungen des Verfassers zu seinen Arbeiten über die Agarici (Leucospori, Hyporhodii, Dermini, Melanospori), Agaricini (Coprinus, Cortinarius, Russula, Lactarius etc.), sowie Boletus, in vielen Tausenden colorirter Abbildungen nach d. Natur mit handschriftl. Notizen über Färbung, Vorkommen etc. Das Ganze in 8 starken Quartbänden, ein erschöpfendes Material, ausschliesslich auf eigenen Beobachtungen beruhend, über die Pilzflora Südbayerns. 250

— Abbildungen von Hymenomyceten in Bleistiftzeichnungen nach verschiedenen Werken (als Materialien zu des Verfassers „Hymenomyceten von Südbayern“). 237 Blatt mit ca. 600—700 Abbildungen, m. Angabe d. Färbung. 4. 20

— Mikroskop. Untersuchungen an Ascomyceten. Analysen von 490 Arten mit Abbildungen der Sporen, nach eigenen Beobachtungen, revidirt von E. Rehm u. G. Winter.

Handschrift des Verfassers auf 493 Blättern in-4., mit zahlreichen Zeichnungen. 50

— Hymenomyceten aus Südbayern. 8 Theile. Berl. 1879—88. gr. 8. m. 240 color. Tafeln (Handcolorit.) 440

Hieraus einzeln:

— Hymenomyceten Augsburgs u. sein. Umgeb. (Augsb.) 1879. 8. m. 40 Kpfrt. 3

— Dasselbe m. color. Kpfrt. 450

— Hyporhodii u. Leucospori aus Südbayern. (Augsb.) 1884. 8. m. 16 color. Kpfrt. 8

— Dermini aus Südbayern. Berl. 1882. gr. 8. m. 49 col. Kpfrt. 9

— Dermini u. Melanospori aus Südbayern. Berl. 1884. gr. 8. m. 20 col. Kpfrt. 10

— Leucospori aus Südbayern. 20 colorirte Tafeln m. ca. 150 Abbild. Berl. 1884. gr. 8. 10

— Cortinariii aus Südbayern. Berl. 1886. gr. 8. m. 60 color. Kpfrt. 30

— Boleti u. Agaricineen aus Südbayern. Berl. 1886. gr. 8. m. 25 color. Kpfrt. 1250

— Polyporei, Hydnei, Thelephorei, Clavarii u. Tremellinei aus Südbayern. Berl. 1888. gr. 8. m. 20 color. Kpfrt. 32

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